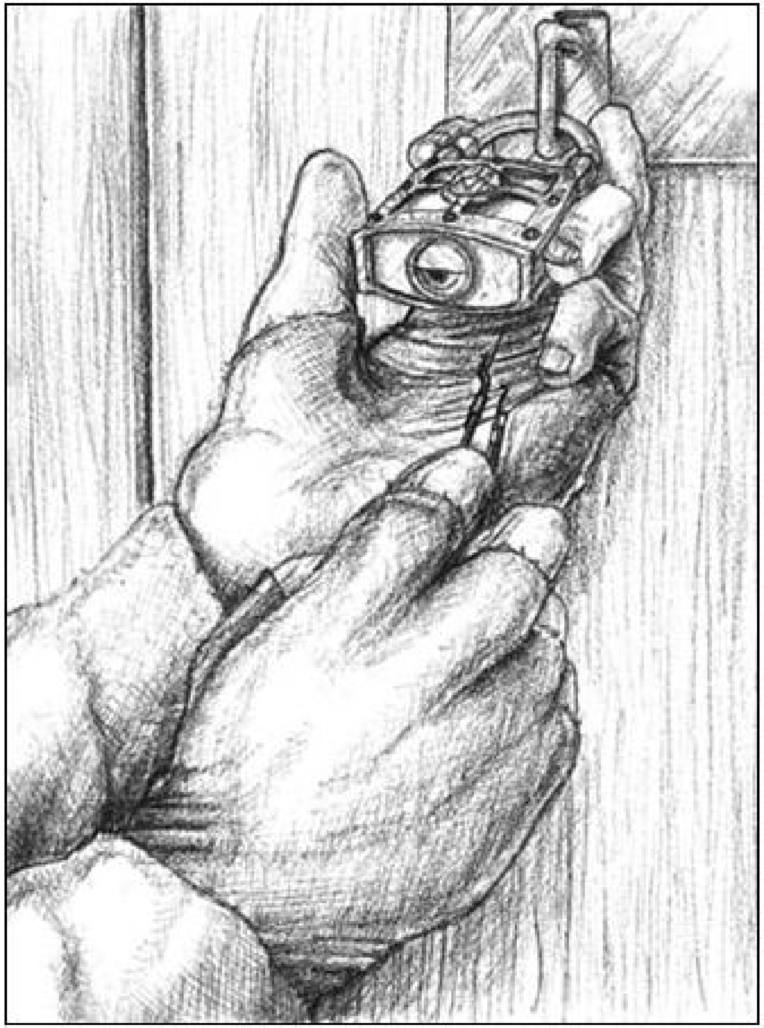


Introduction to Lockpicking & Key Bumping

by datagram

Animations by Deviant Ollam



About Me

- Mild mannered Sys. Admin.
- C,C++,Python,ASM, etc. Programmer
- Enjoys long walks on the beach
- Hacke…Computer Security Enthusiast
- Lockpicking Enthusiast, would eventually like to become a bonafide locksmith.

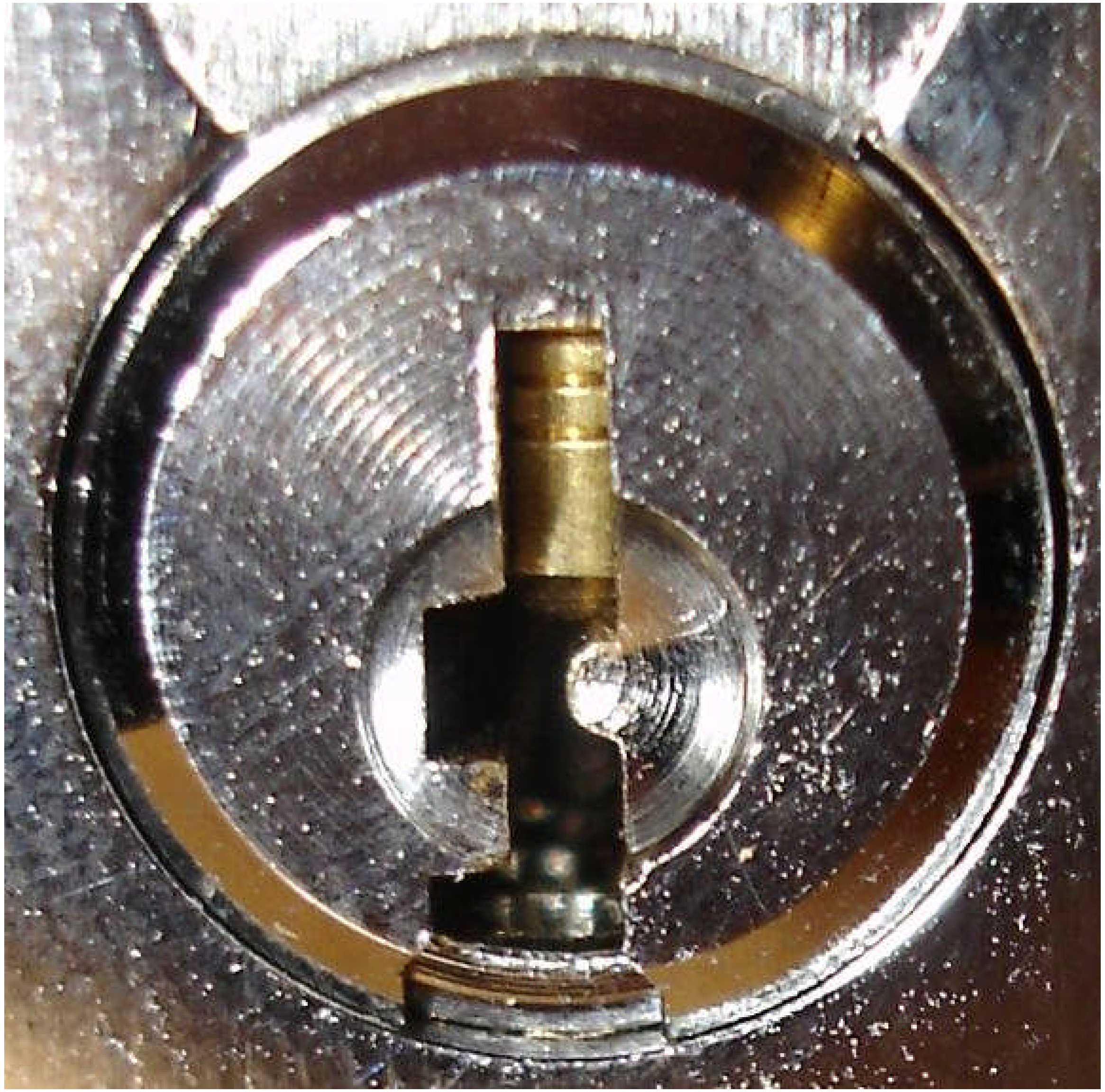


Introduction To Lockpicking

- How Locks Work
- How Keys Work
- Picking a Lock
- Types of Locks

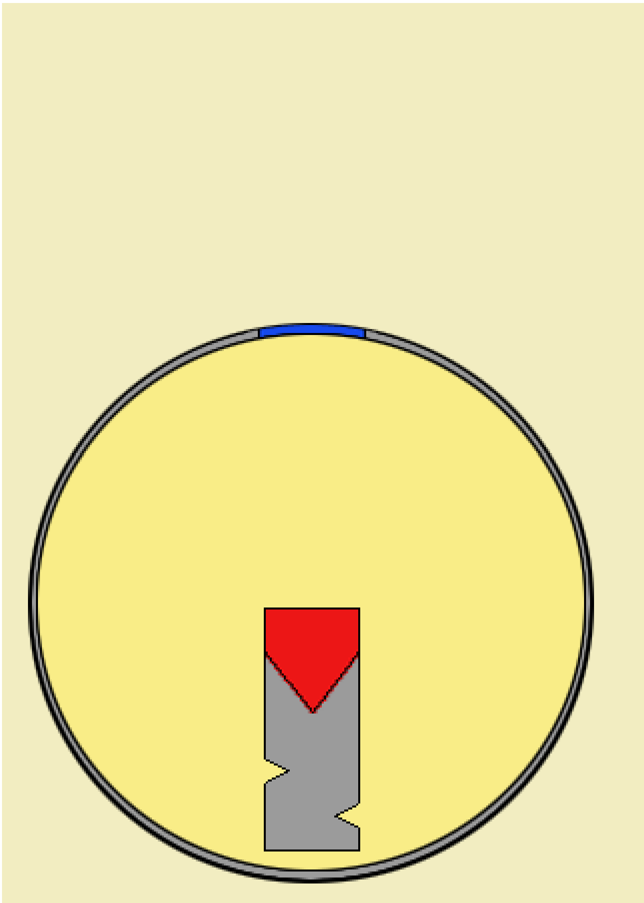


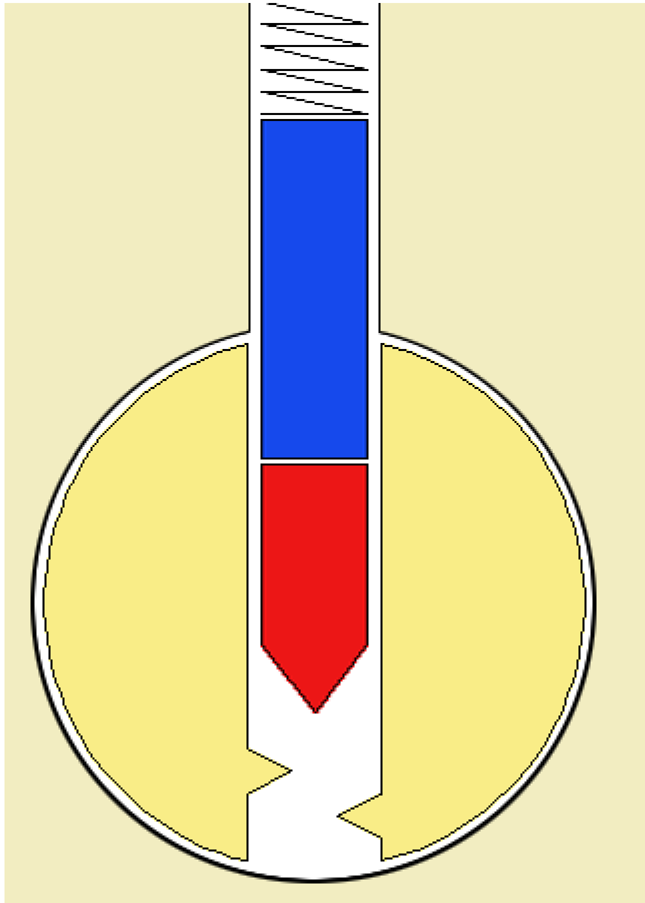
How Locks Work





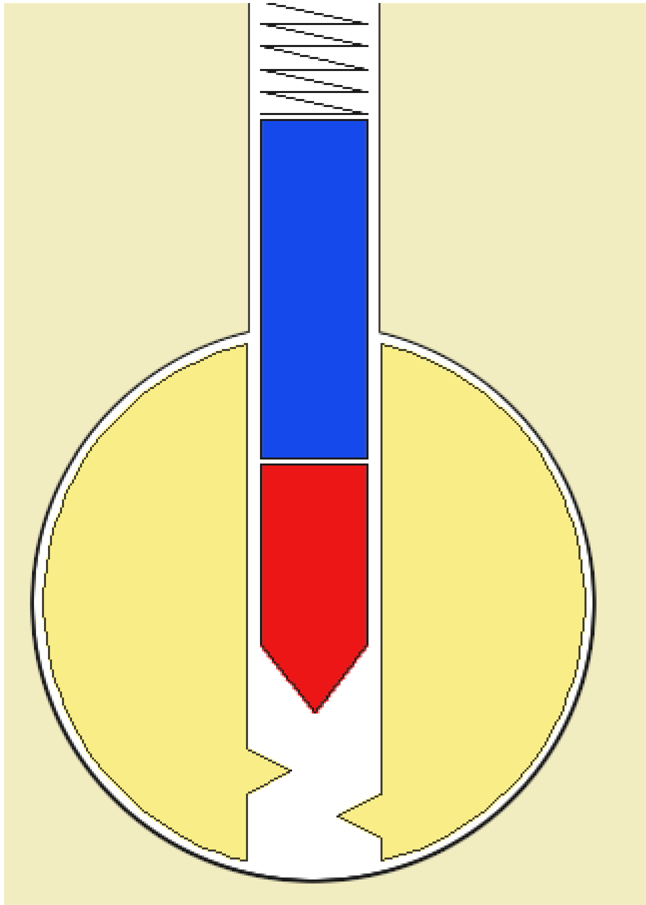
How Locks Work







How Locks Work



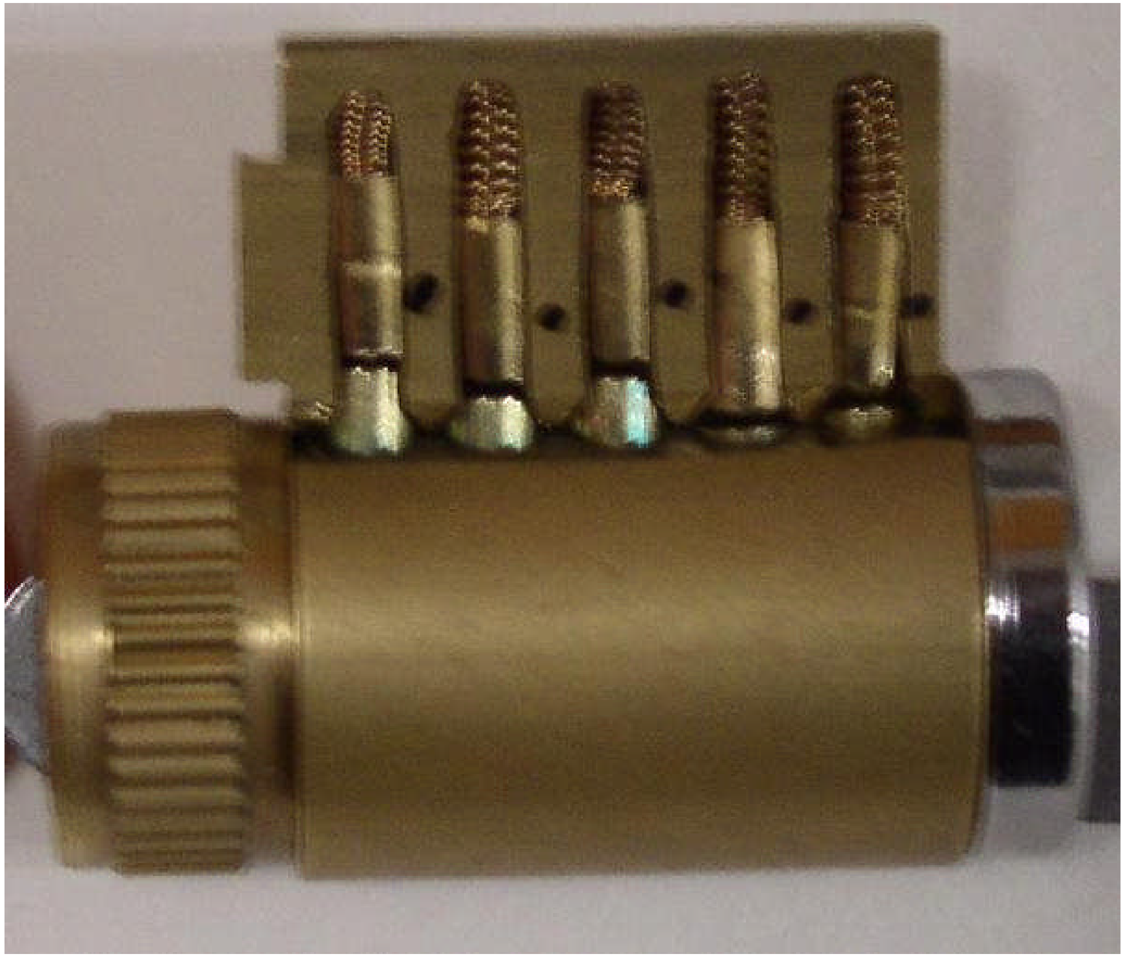


How Locks Work



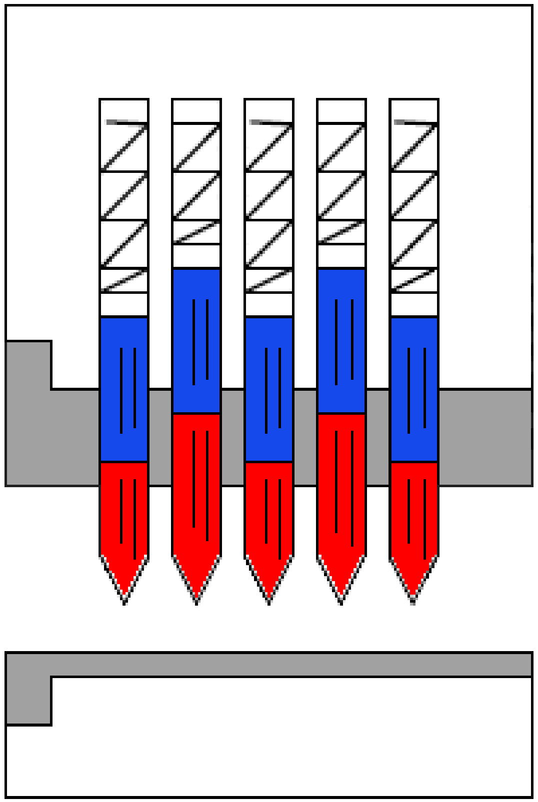


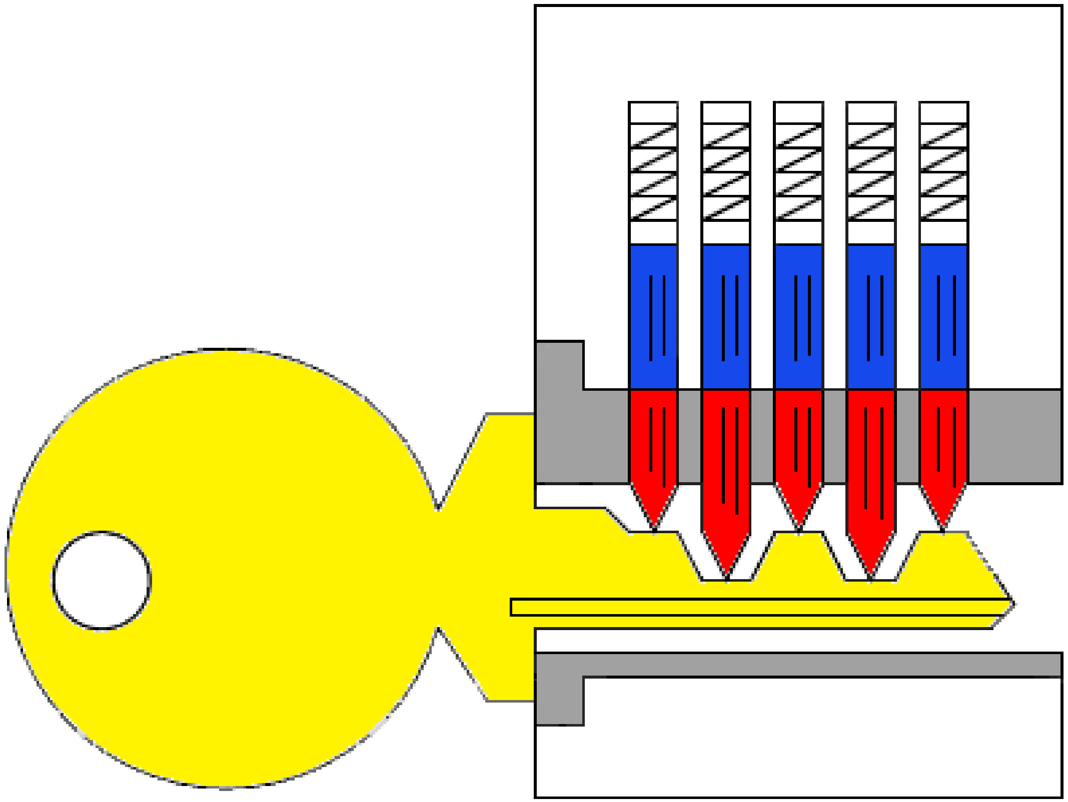
How Locks Work





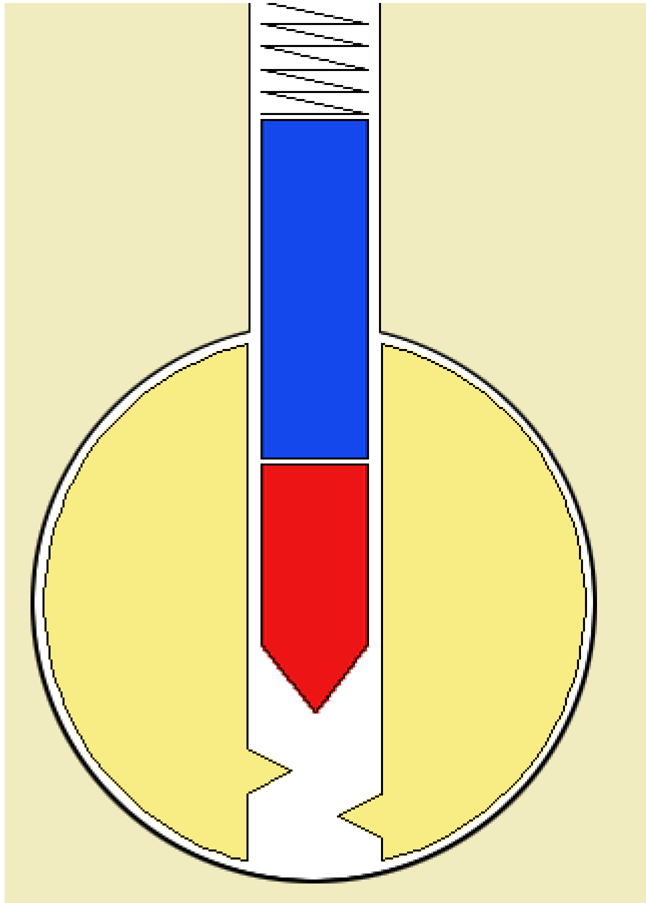
How Keys Work







How Keys Work



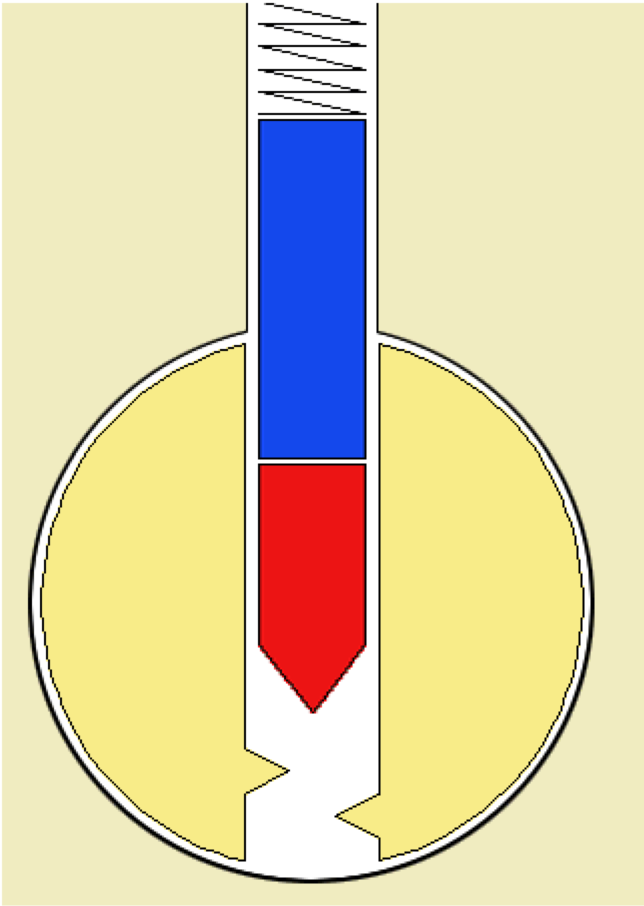


Picking a Lock

- Apply (minimal) torque
- Find binding pin
- Raise all pin pairs to shear line

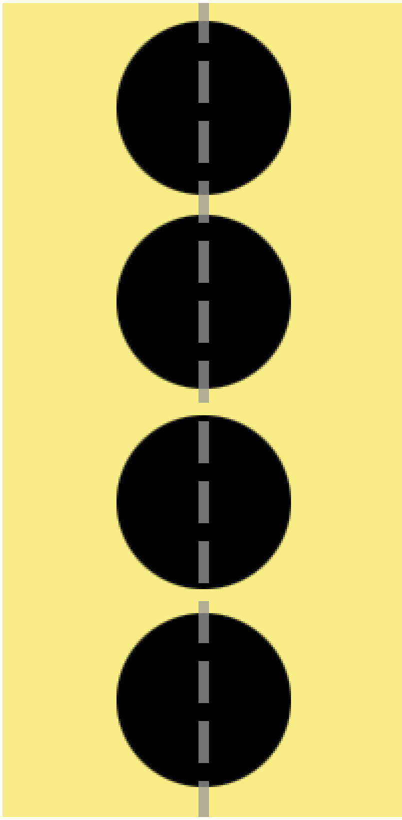


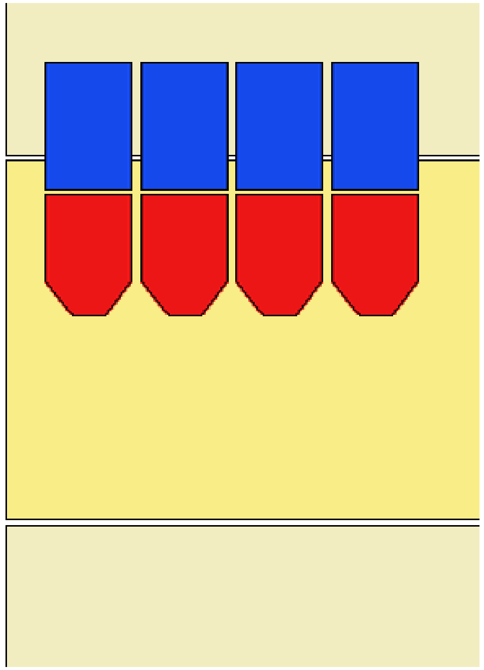
Setting a Pin





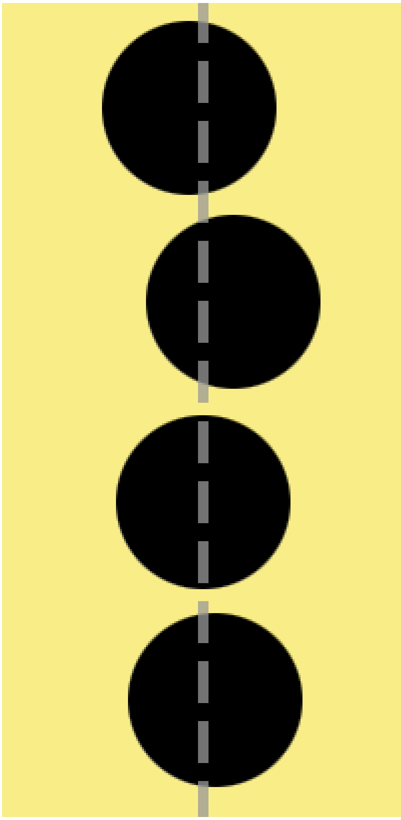
Pin Binding Explained

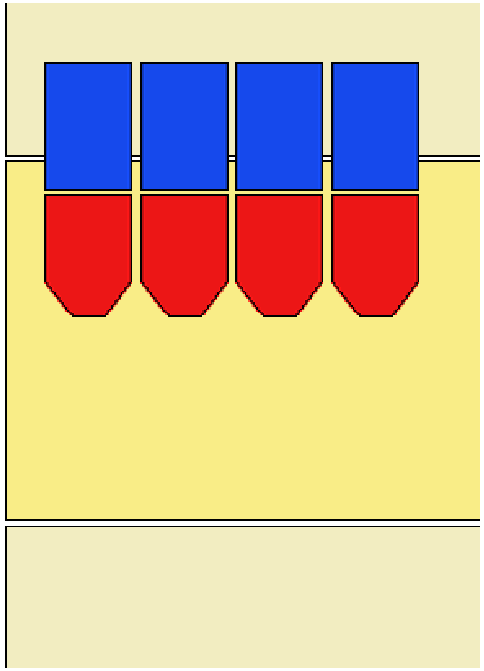






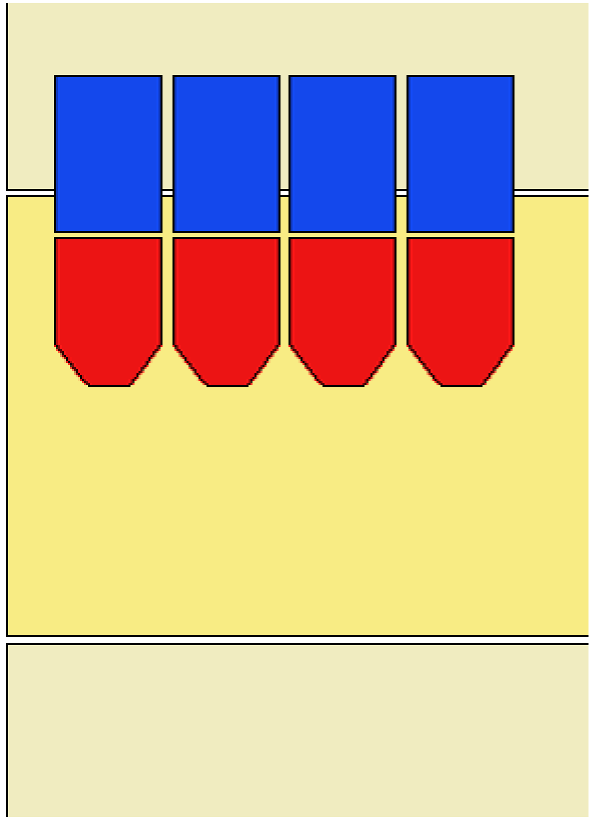
Pin Binding Explained







Picking a lock





High Security Locks

- Usually offer one/more of the following:
  - Restrictive Keyways
  - Security Pins
  - Side Pin
  - Side Bars
  - Axial Rotation



Restrictive Keyways (BEST)



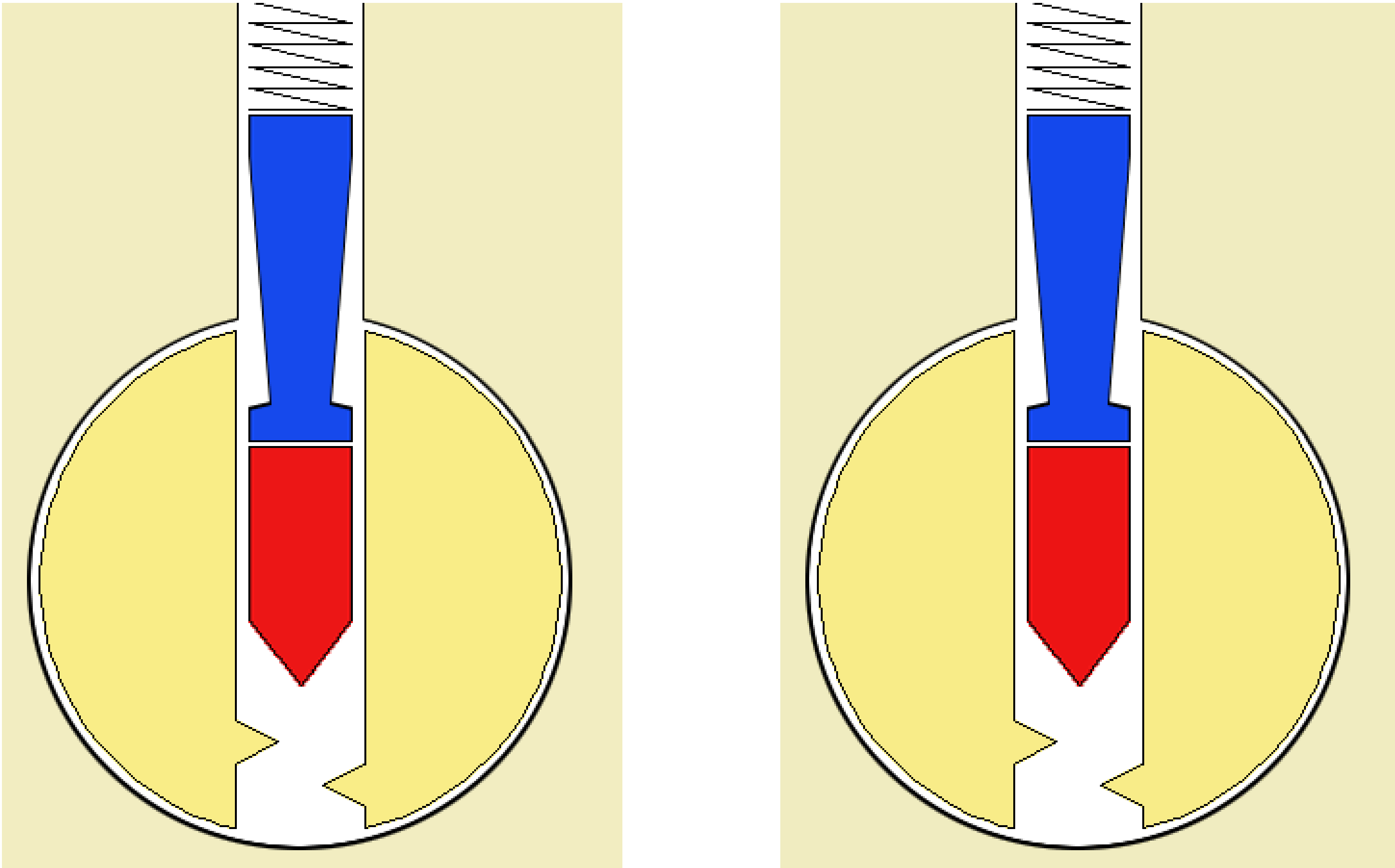
==



Evil. Keyway.

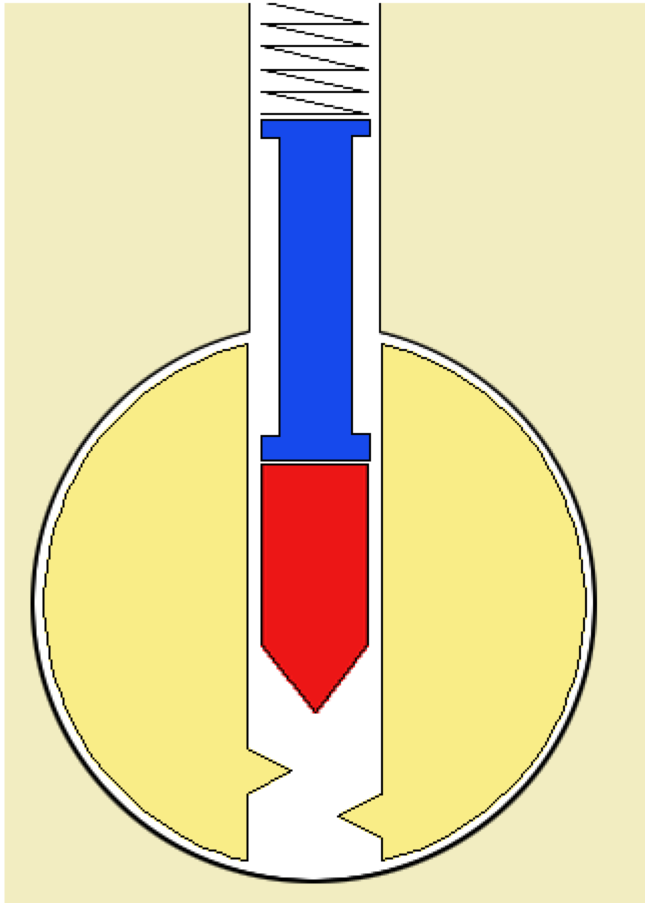


Security Pins (Mushrooms)



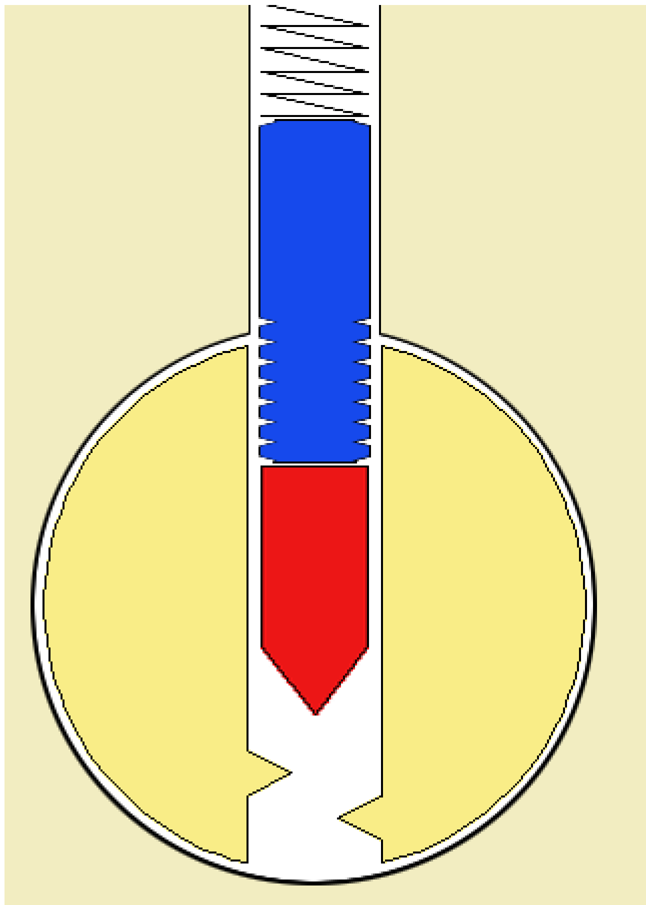


Security Pins (Spool)



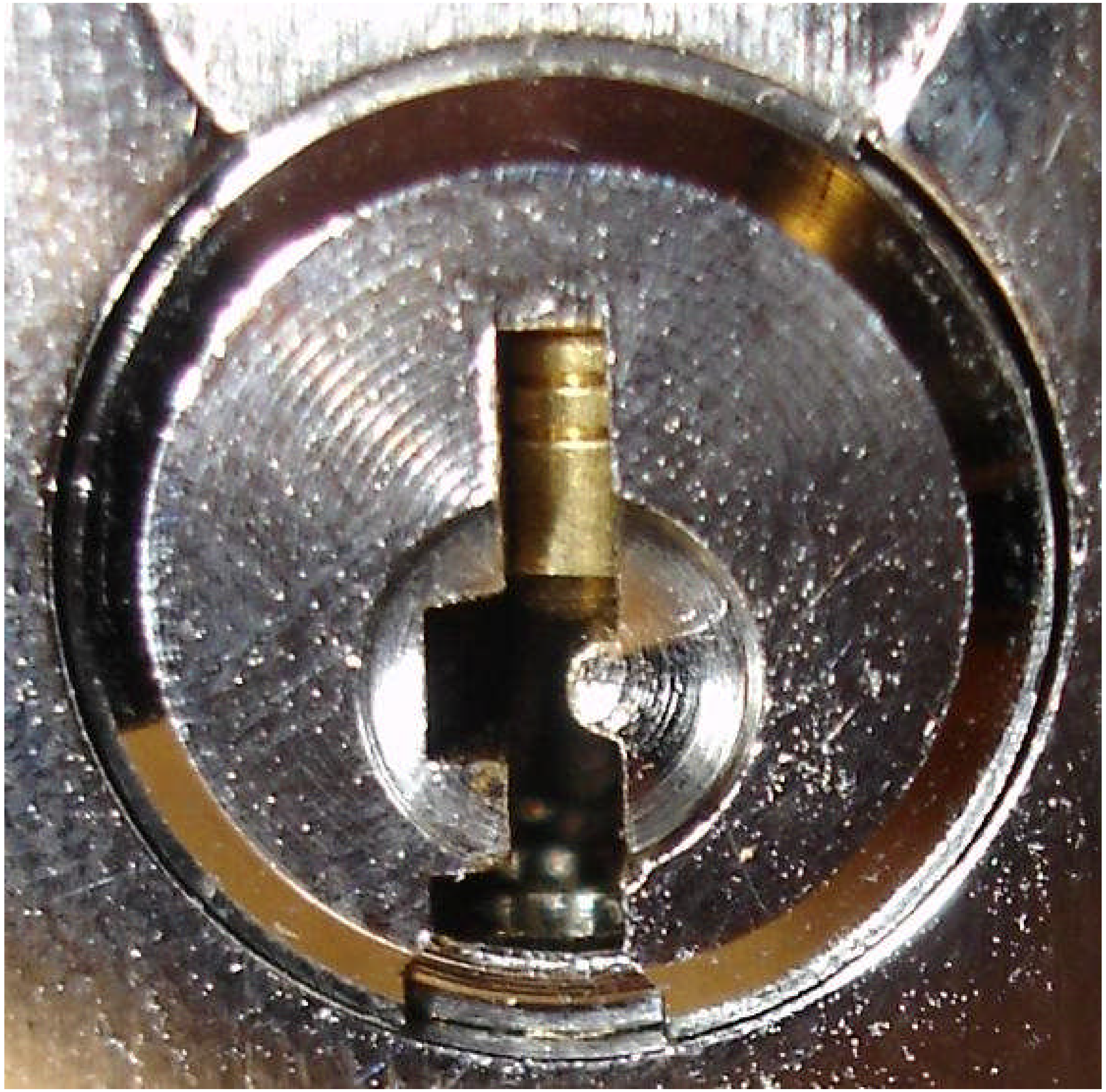


Security Pins (Serrated)





Security Pins (Serrated)





Side Pins

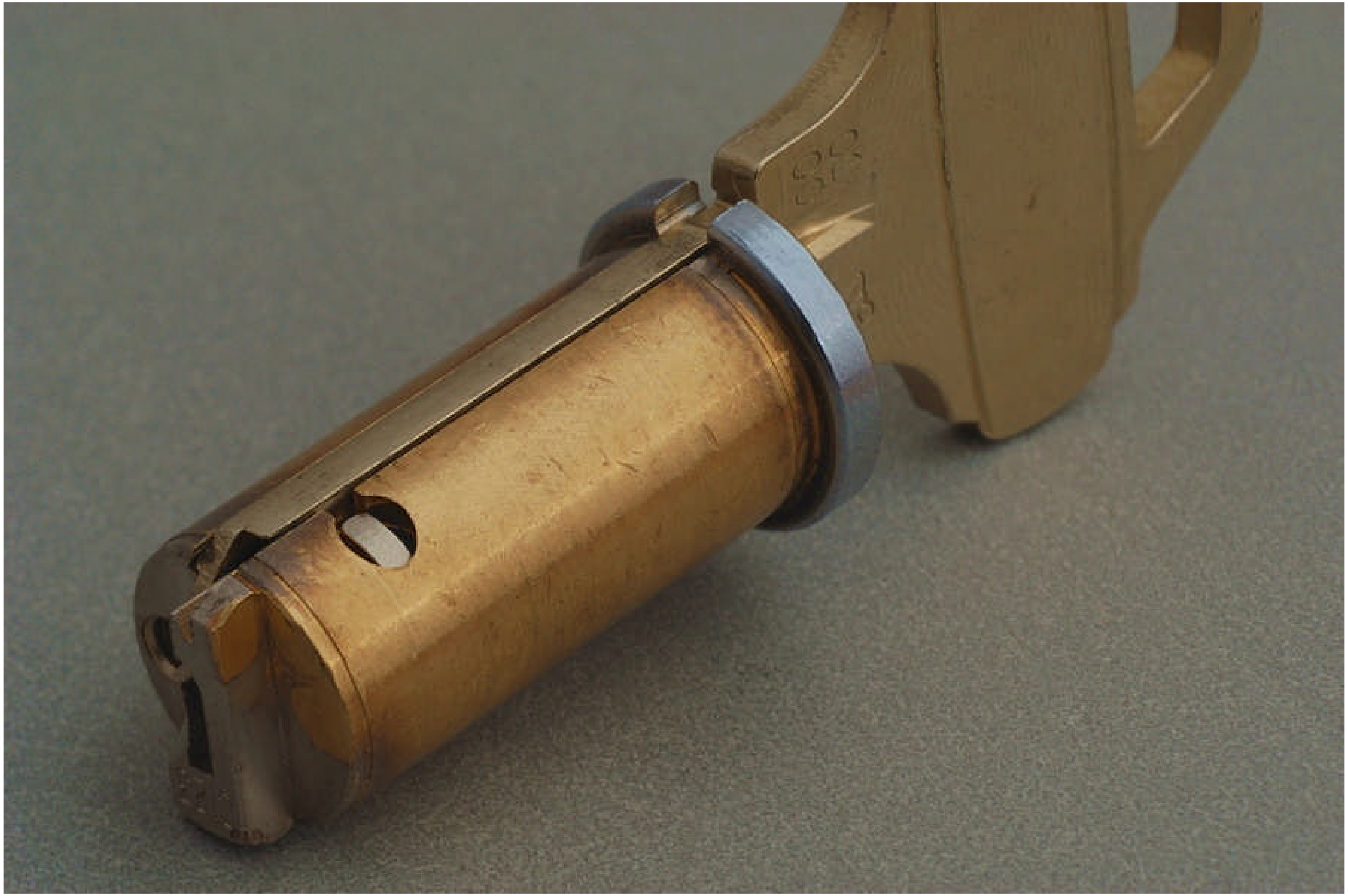




Side Pins



Side Pins





Side Pins





Side Pins





Side Bars



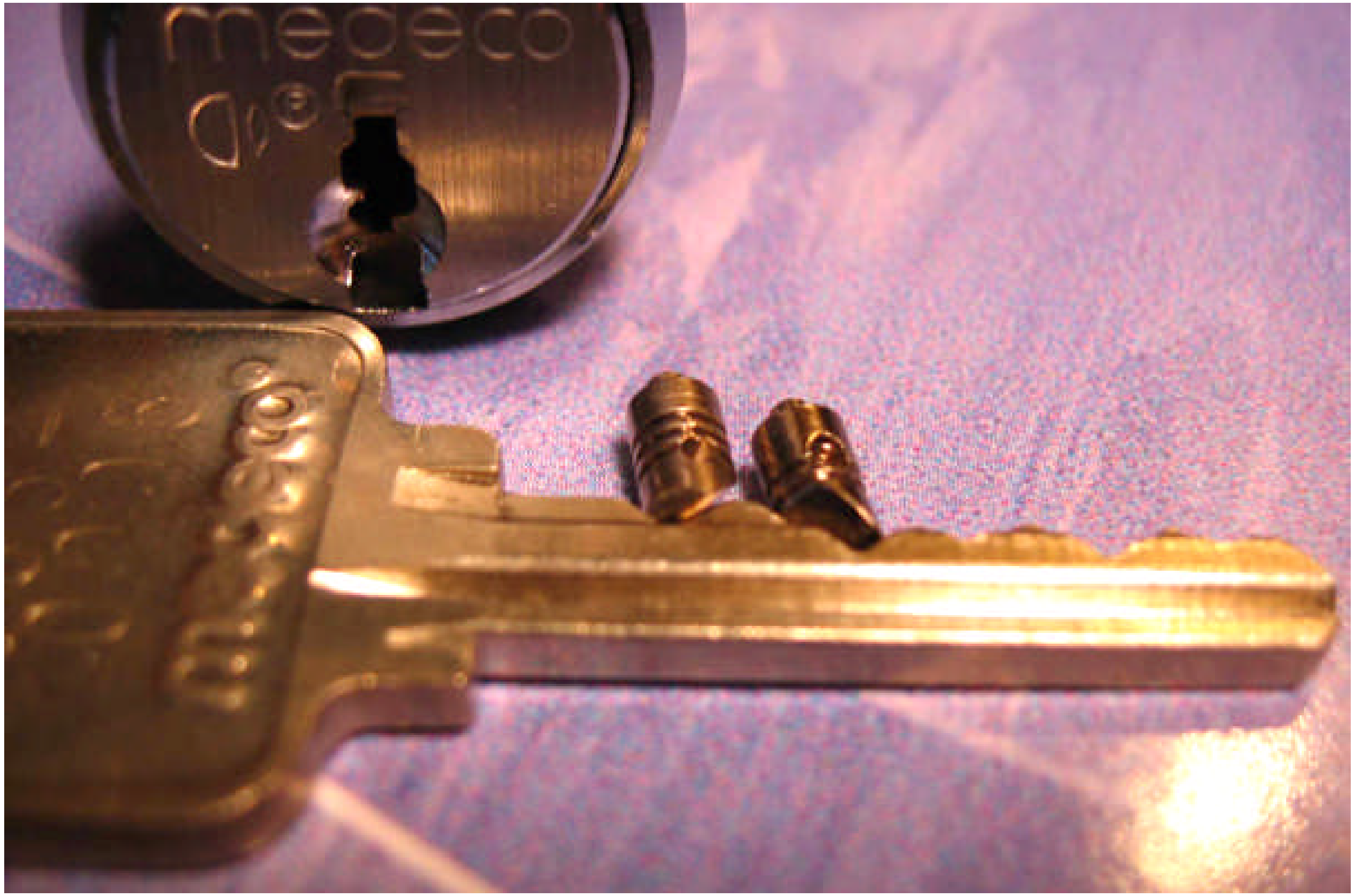


Axial Rotation



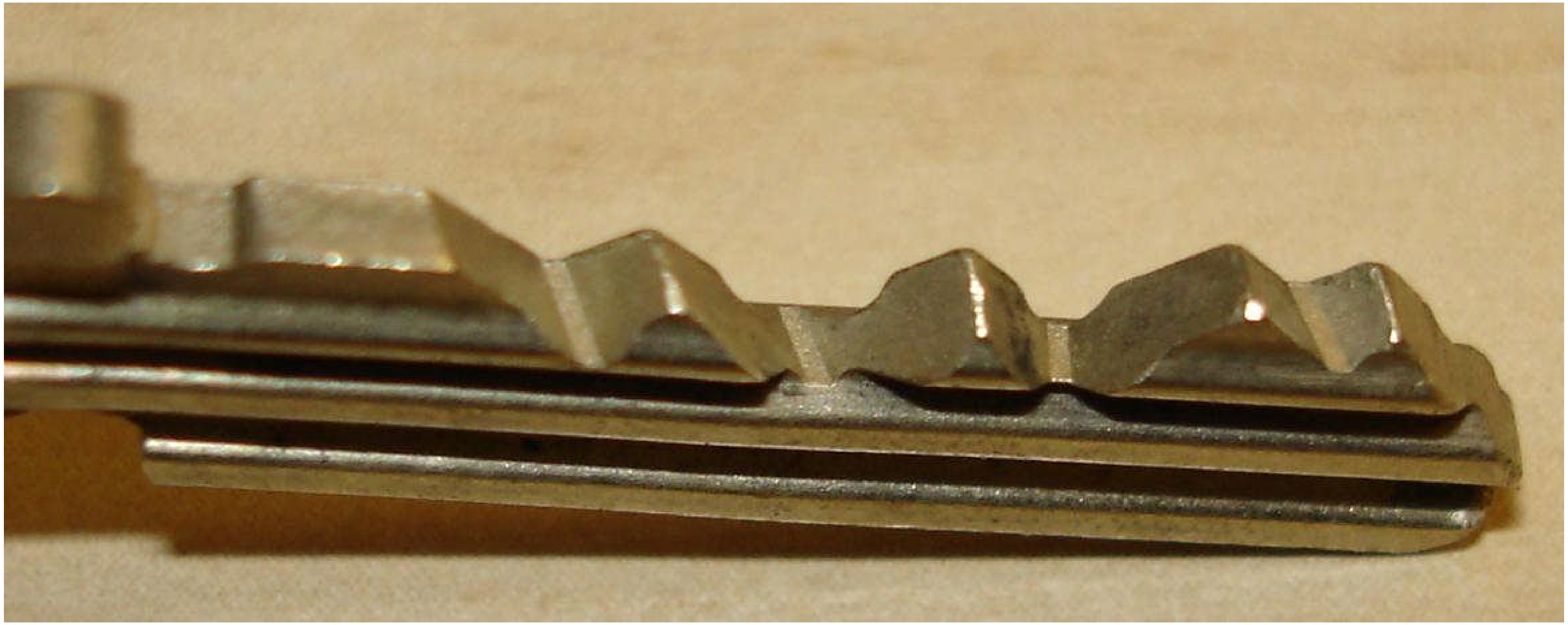


Axial Rotation





Axial Rotation





Types of Locks

- Pin Tumblers
- Warded
- Tubular
- Dimple



Warded Locks

- Latch and spring
- One important latch
- Other latches to get in the way

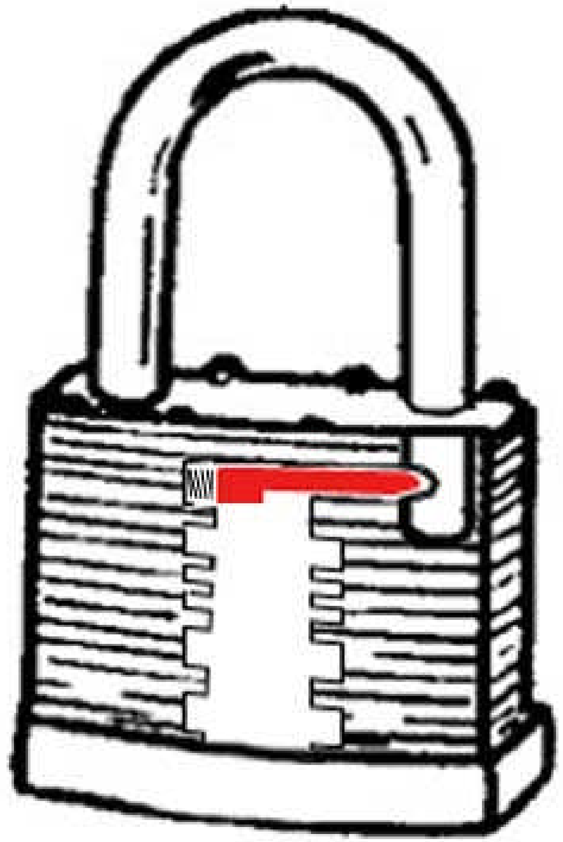
- Requires:
  - Warded picks
    - Bought
    - Home made

- Commonly found:
  - Anywhere; popular, but not as much as pin tumblers





Warded Locks





Warded Picks



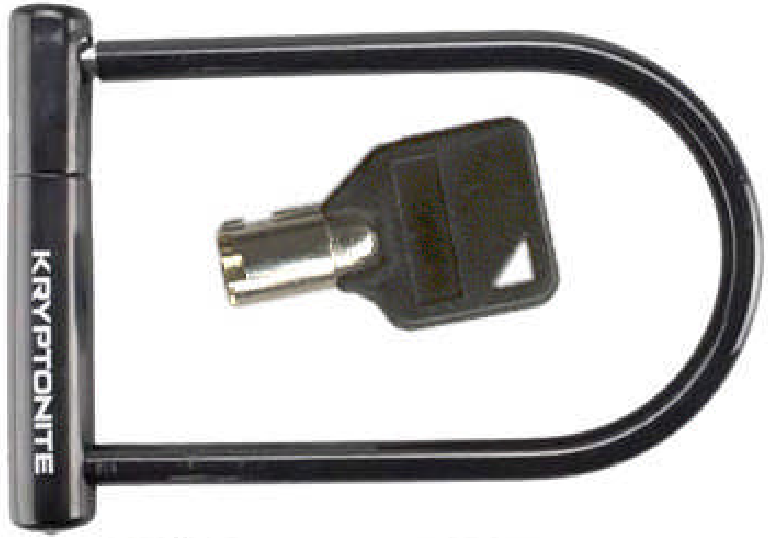


Tubular Locks

- Pin stacks (4,7,8)
- Arranged in a circle

- Requires:
  - Tubular picks
  - Ballpoint pen casing

- Commonly found:
  - Vending machines
  - Bicycle locks









Tubular Picks





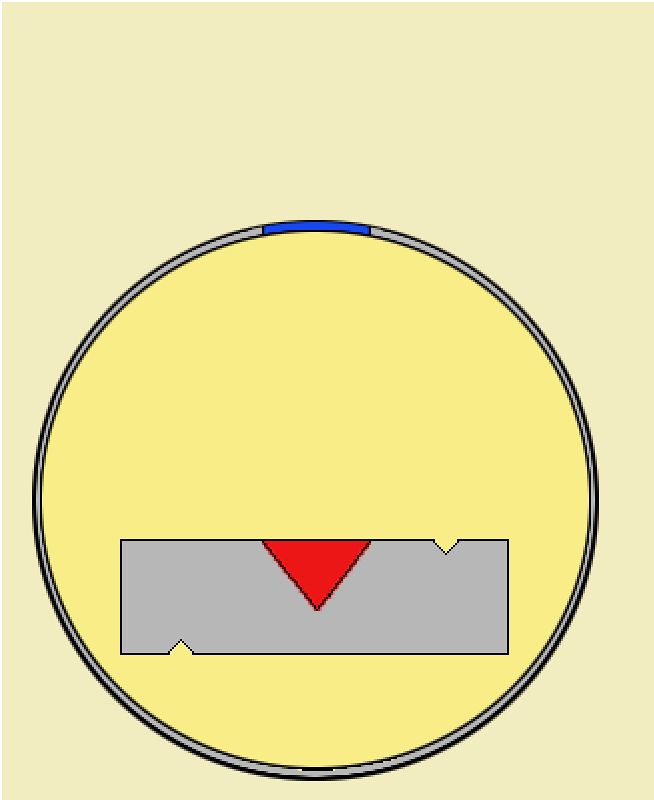
Dimple Locks

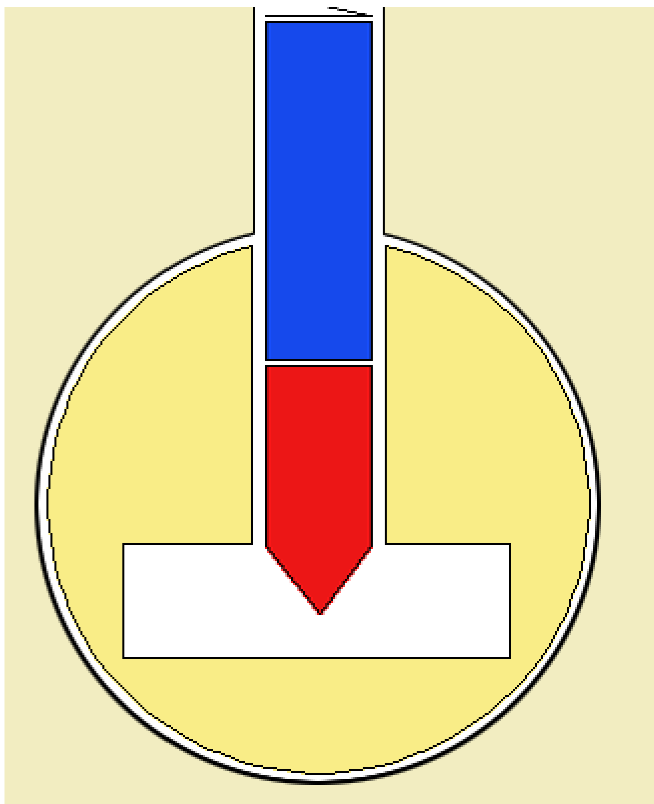
- Pin stacks
- Horizontal keyway
  - Hard to pick!
- Requires:
  - Dimple picks
  - Key bumping
- Commonly found:
  - High security locks
  - Automobile door locks
  - Automobile anti-theft devices





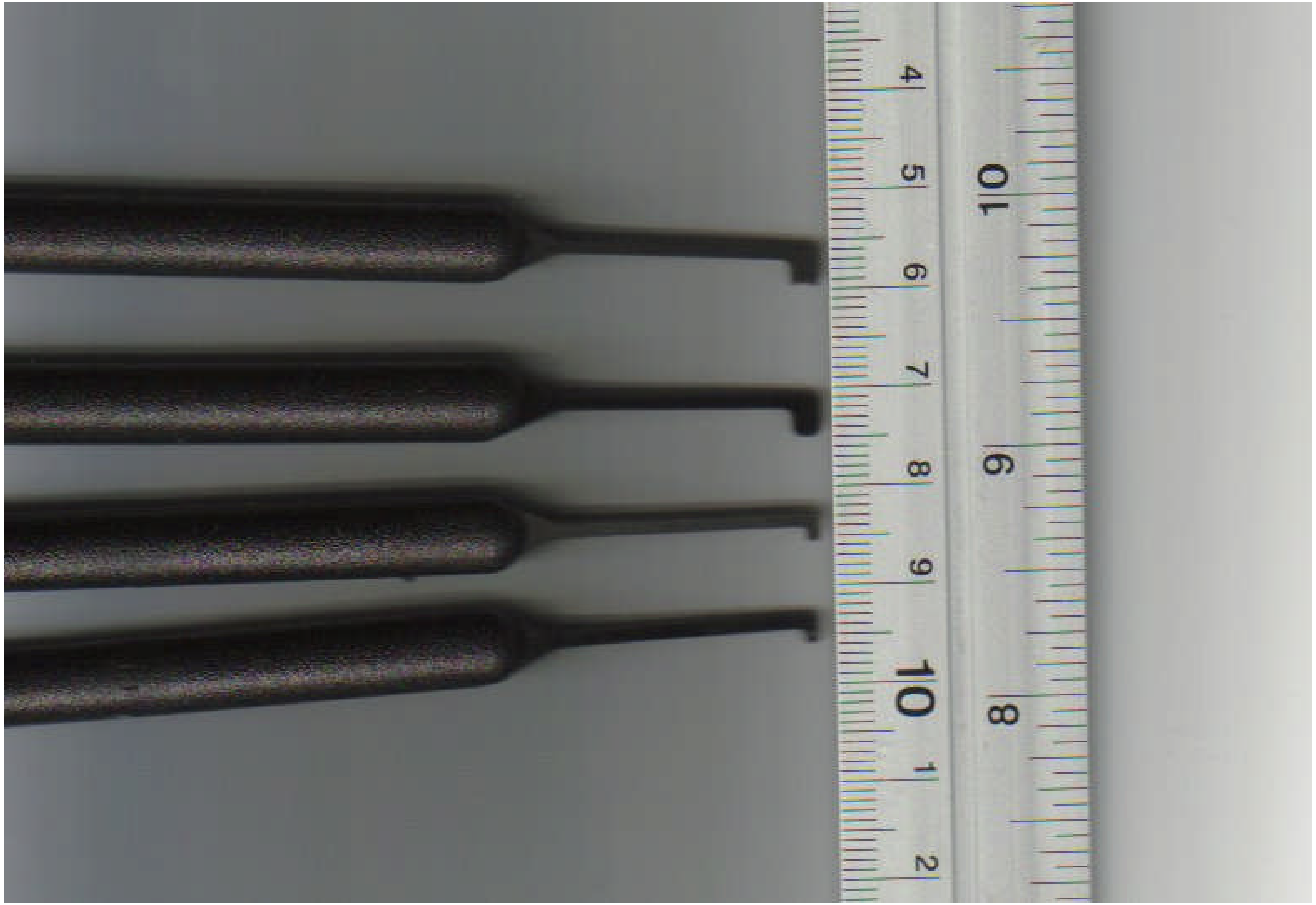
Dimple Locks







Dimple Picks (Souber)





Introduction to Lock bumping

- How Bumping Works
- Pick Guns
- Creating Bump keys
- Minimal movement method
- Defending against Bumping



General Response to Bumping

- Fake

- Hard to do; only professionals can do it
- Requires massive monetary/time investment

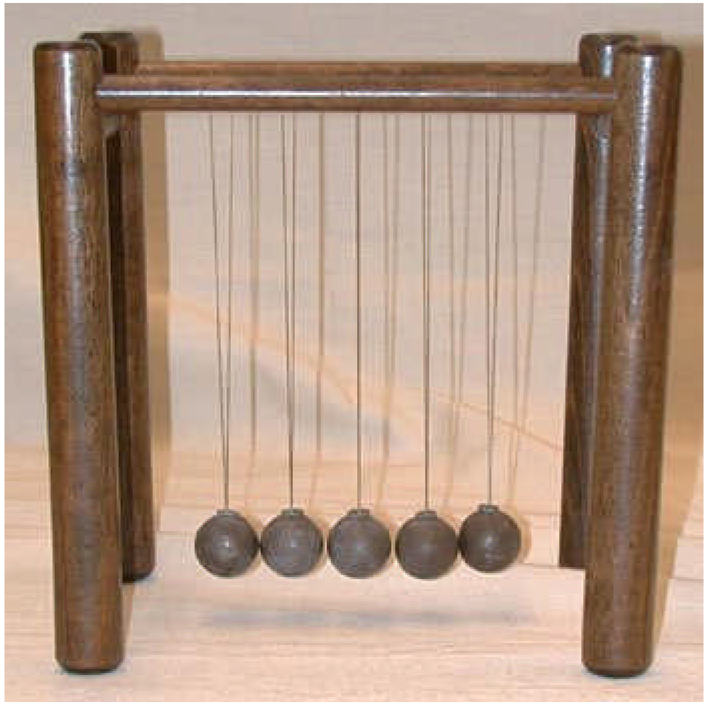
- Requires many keys for 100% efficiency
- Keys must be made extremely exact
- Keys are hard to obtain

- Burglars need to know what lock it is beforehand



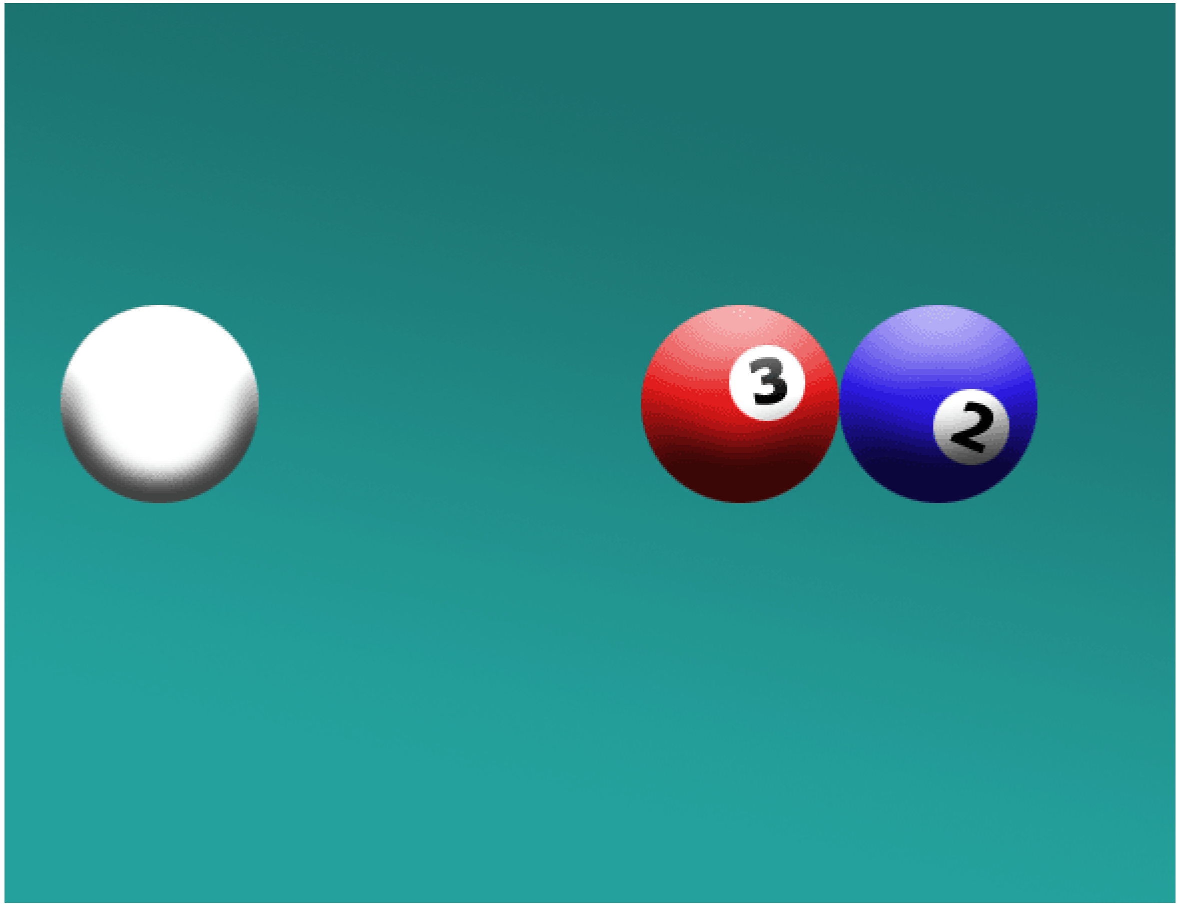
How Bumping Works

- Specialized keys
- Newton’s cradle principle
- Related to pick gun method
- Also explained by pool balls



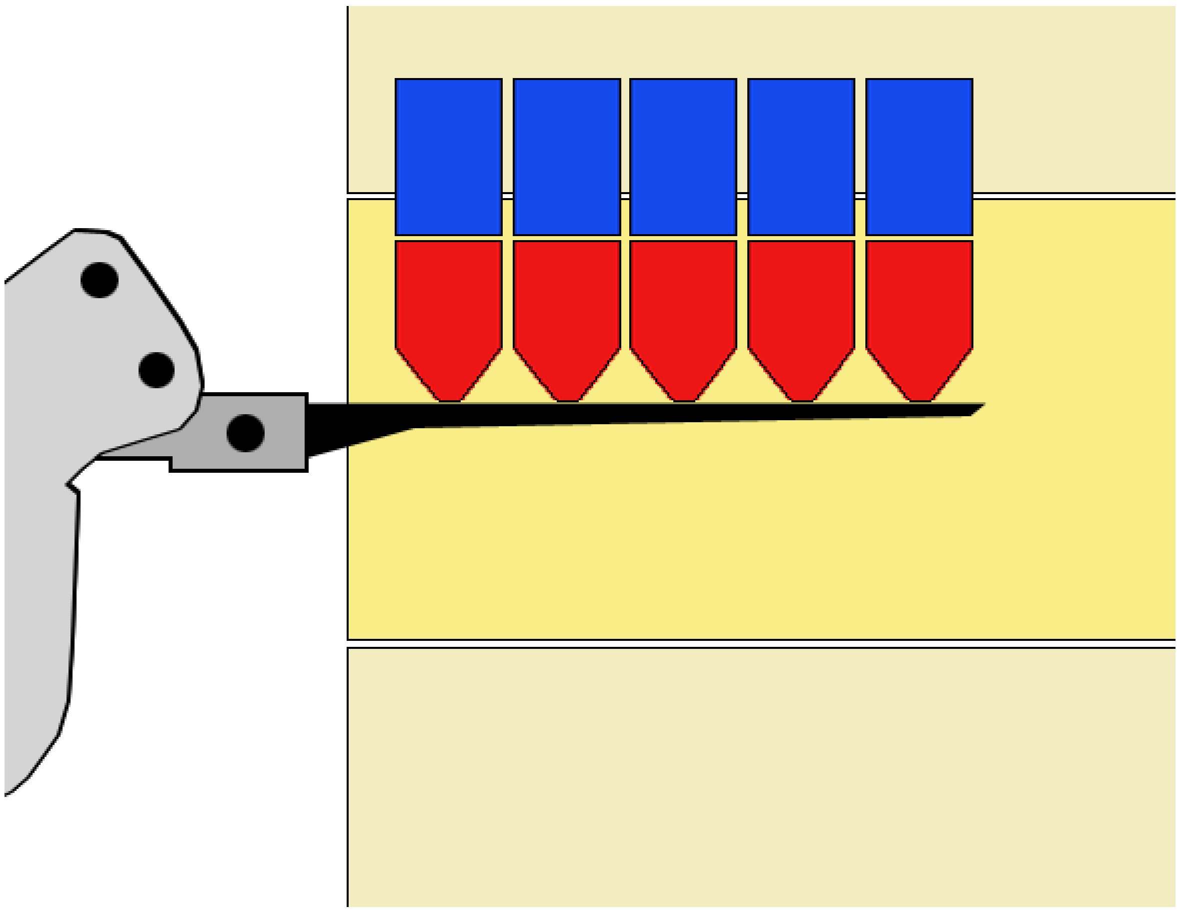


How Bumping Works





Pick Gun Mechanics



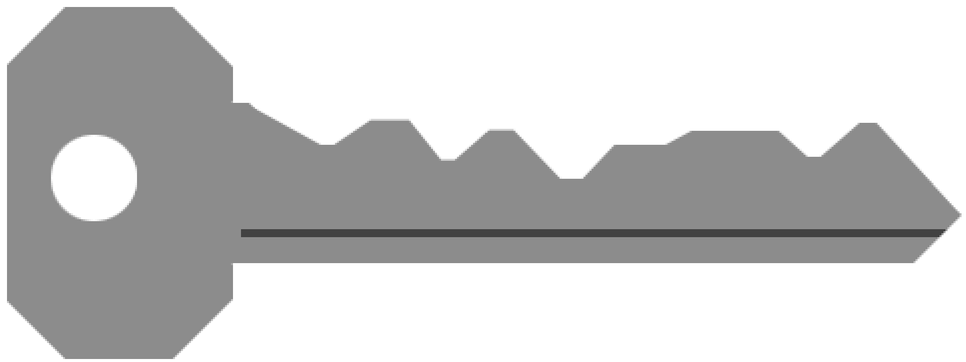
Bump Keys





Creating Bump keys

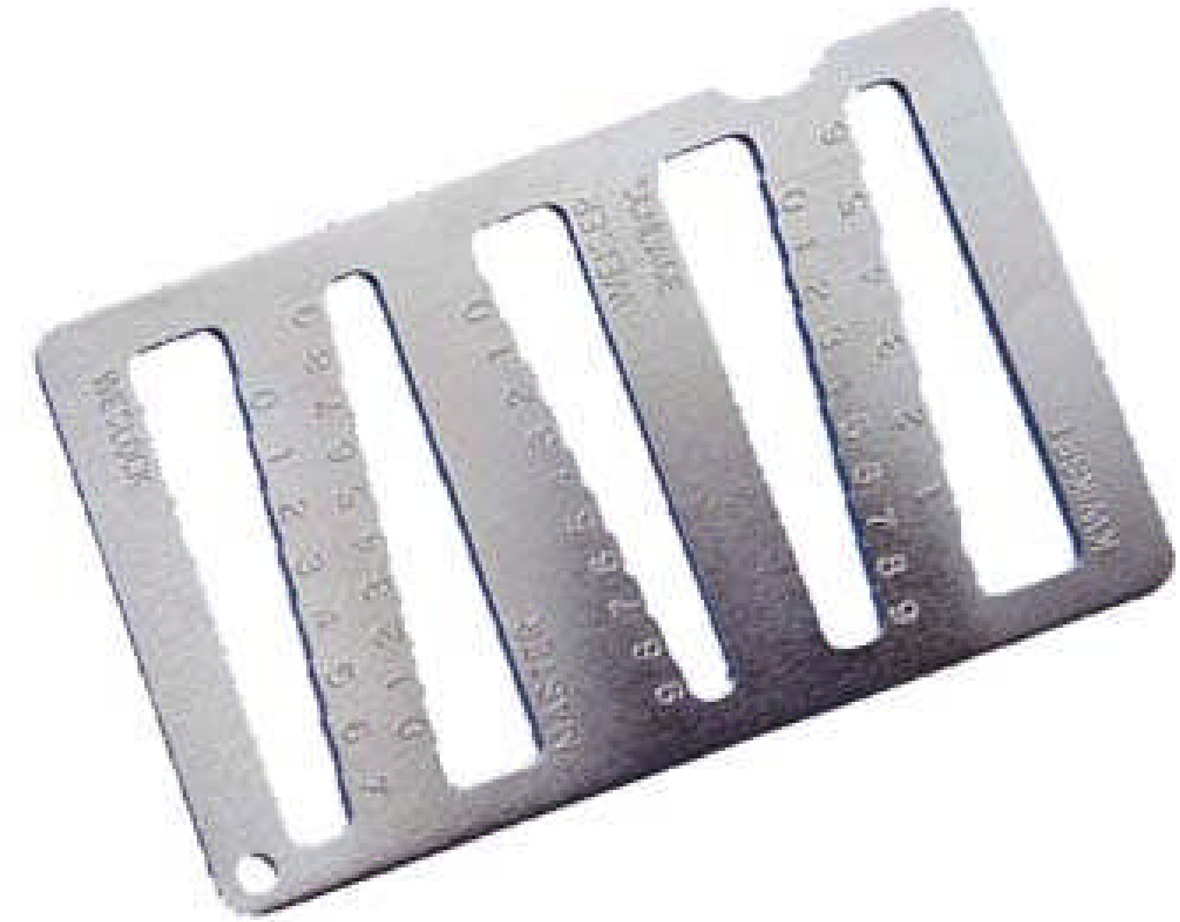
- Obtain key that will fit the lock
- Cut “999” key, (deepest pin depths)
  – Key gauges can be used for this



- Cut with:
  – Hand file, dremel, professional key cutter

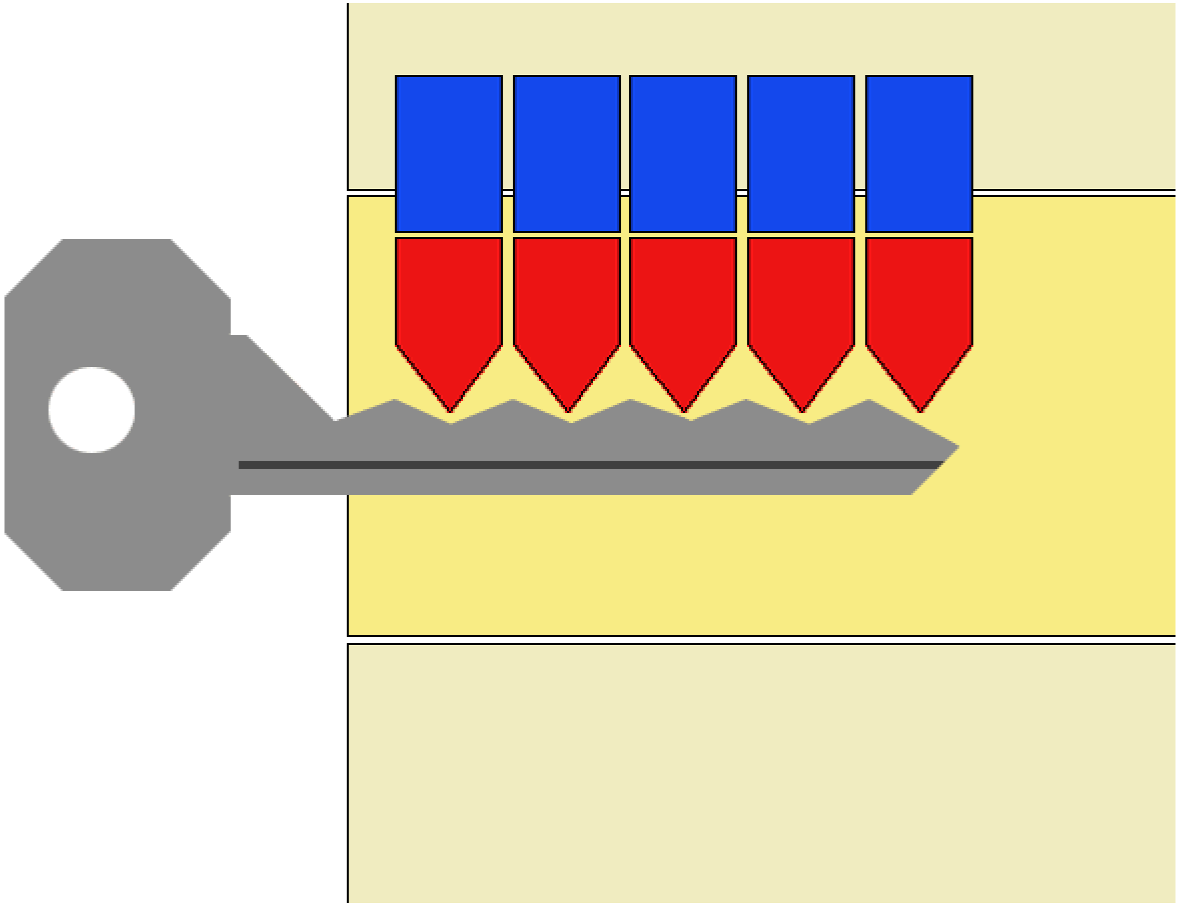


Key Gauges



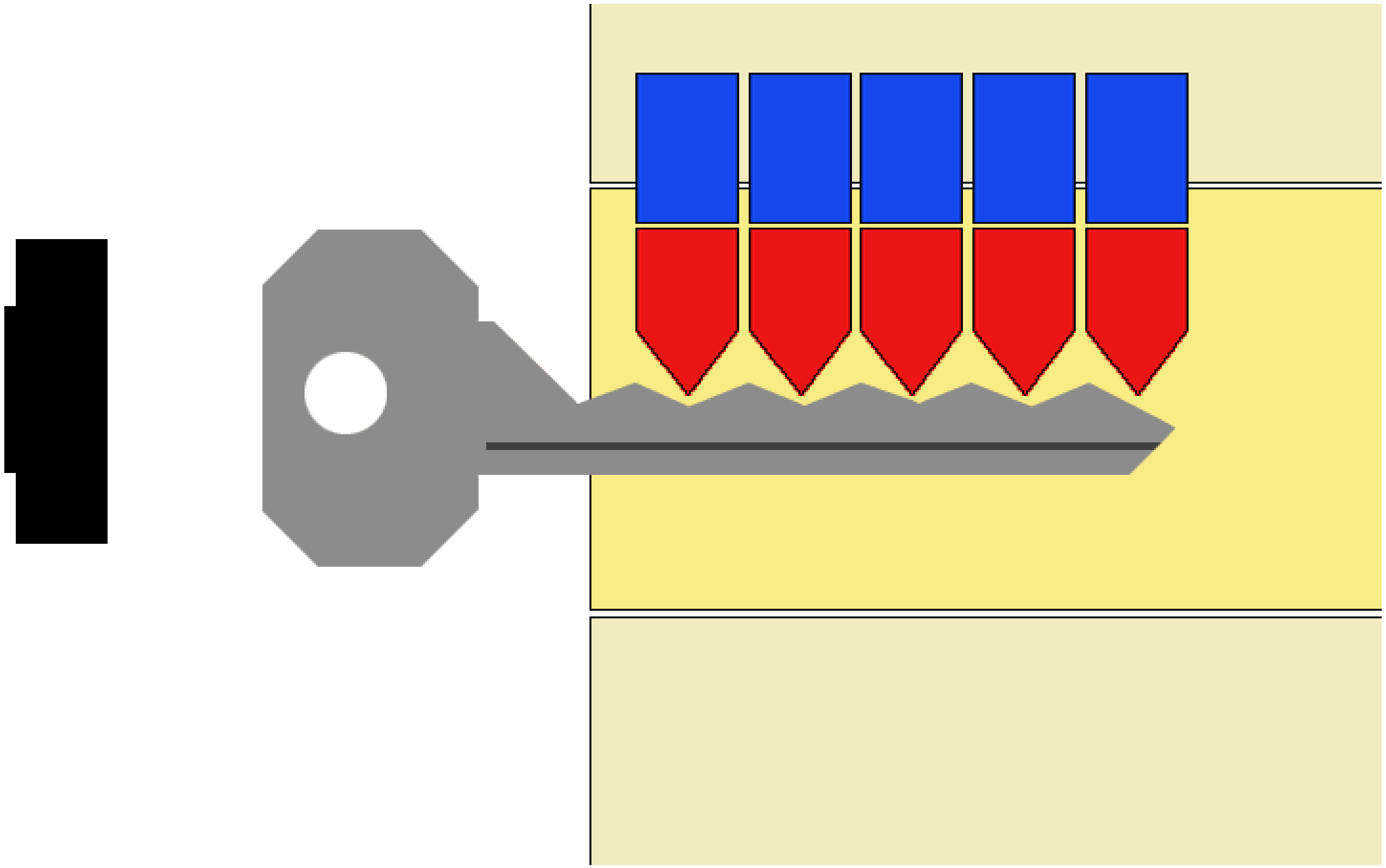


Key Bumping



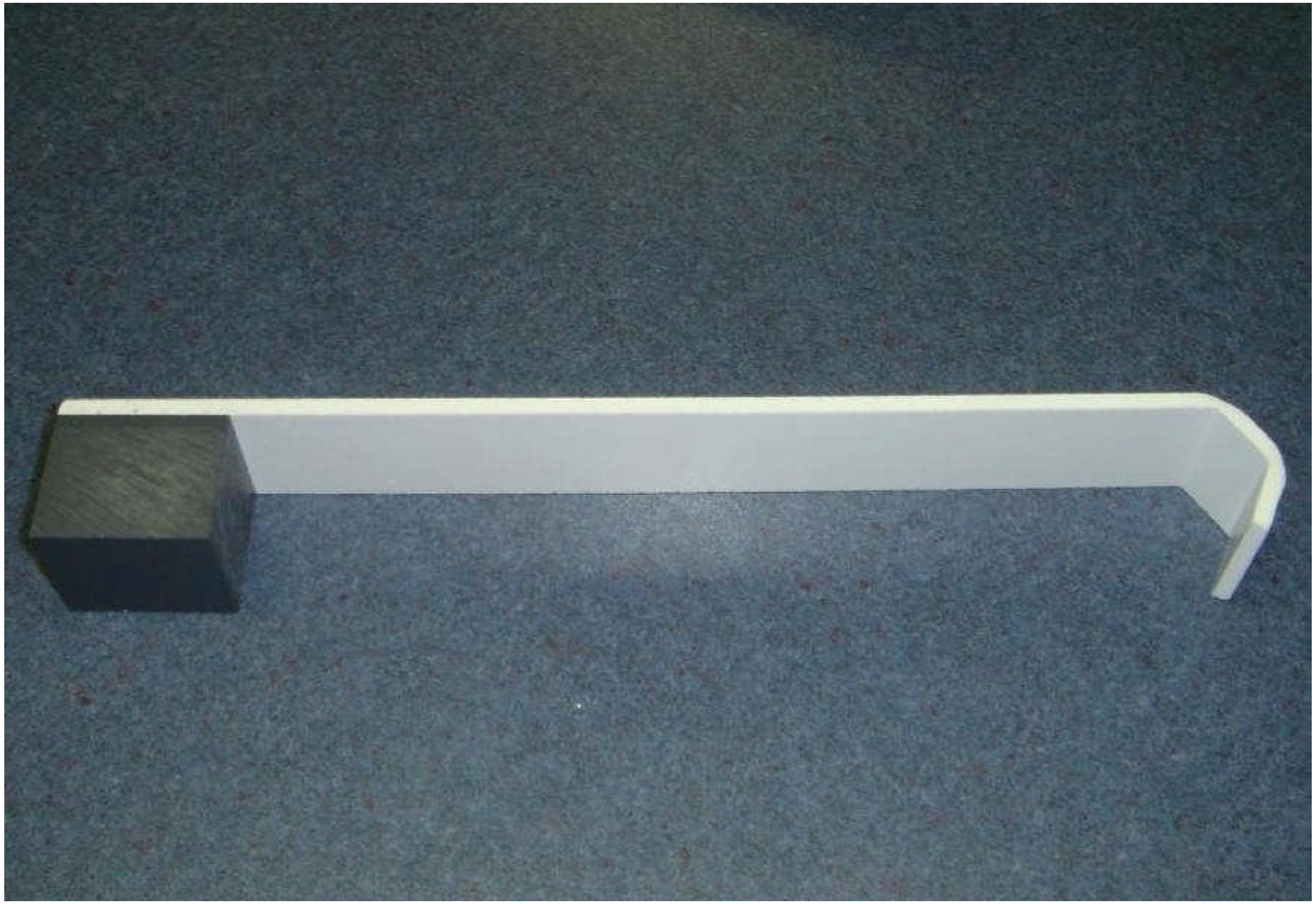


Key Bumping

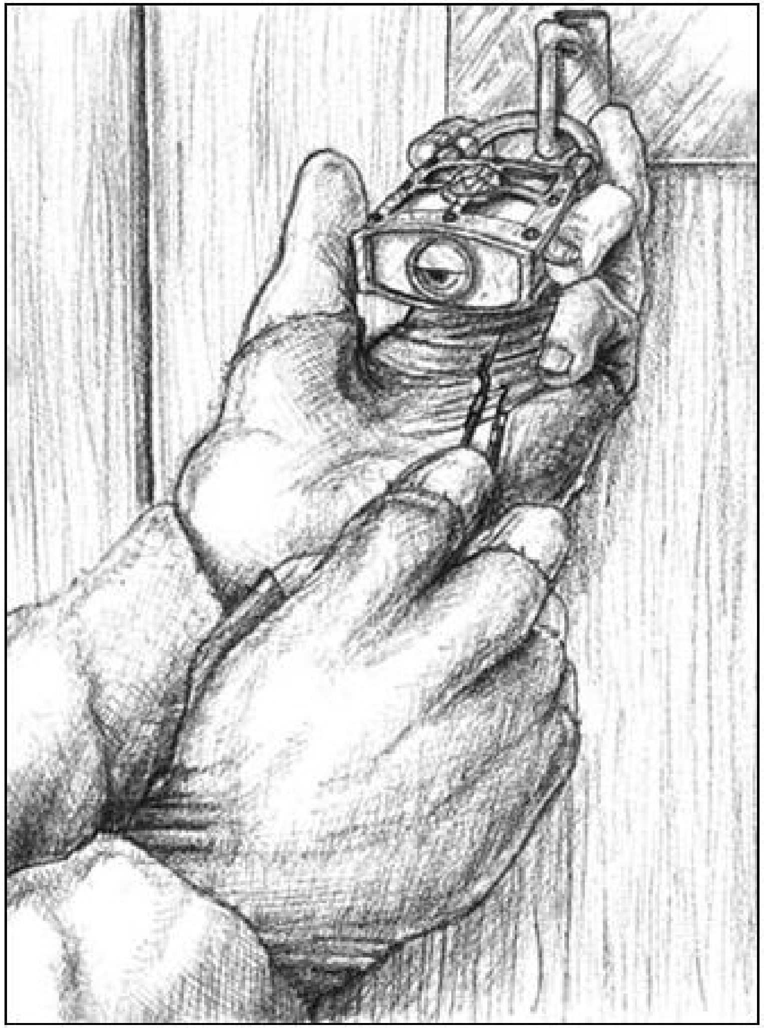




Bumping Hammers



- KEBump



Demonstration



Bumping Tracks

- Slight deformations can occur
- Caused by the shoulder
- Solution? Glue gun shoulder!





Glue Gun Shoulders

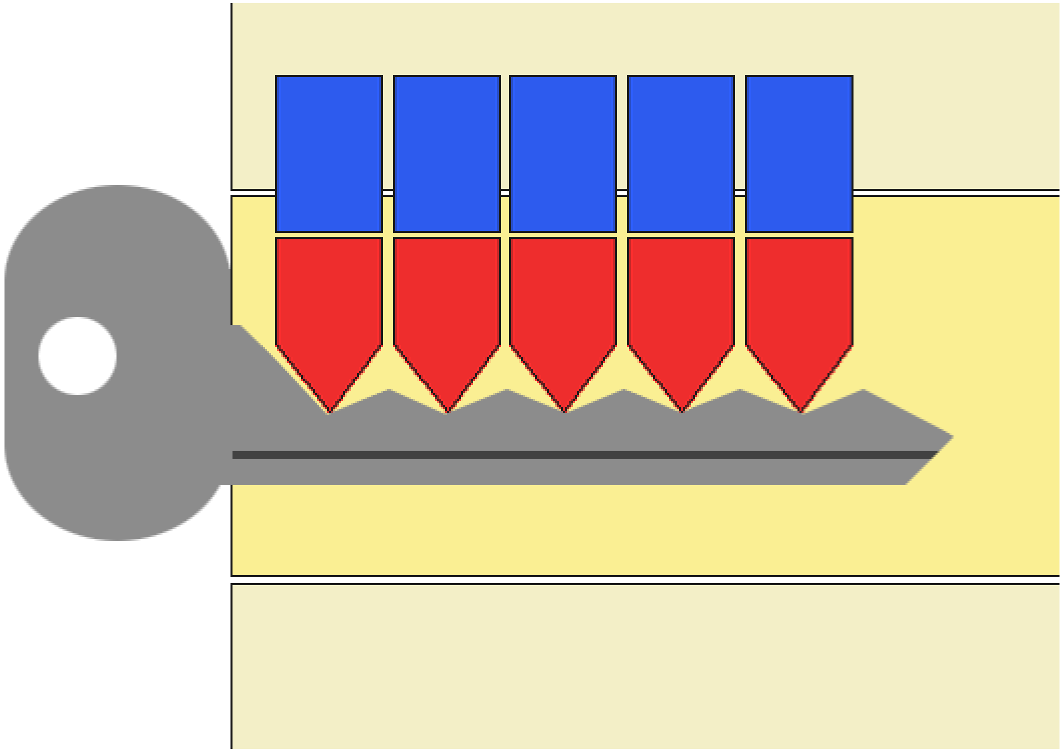
- Mitigates damage to face of lock

1. Remove shoulder on key
2. Cut glue gun stick in half
3. Heat halves and seal together on key
4. Bump!



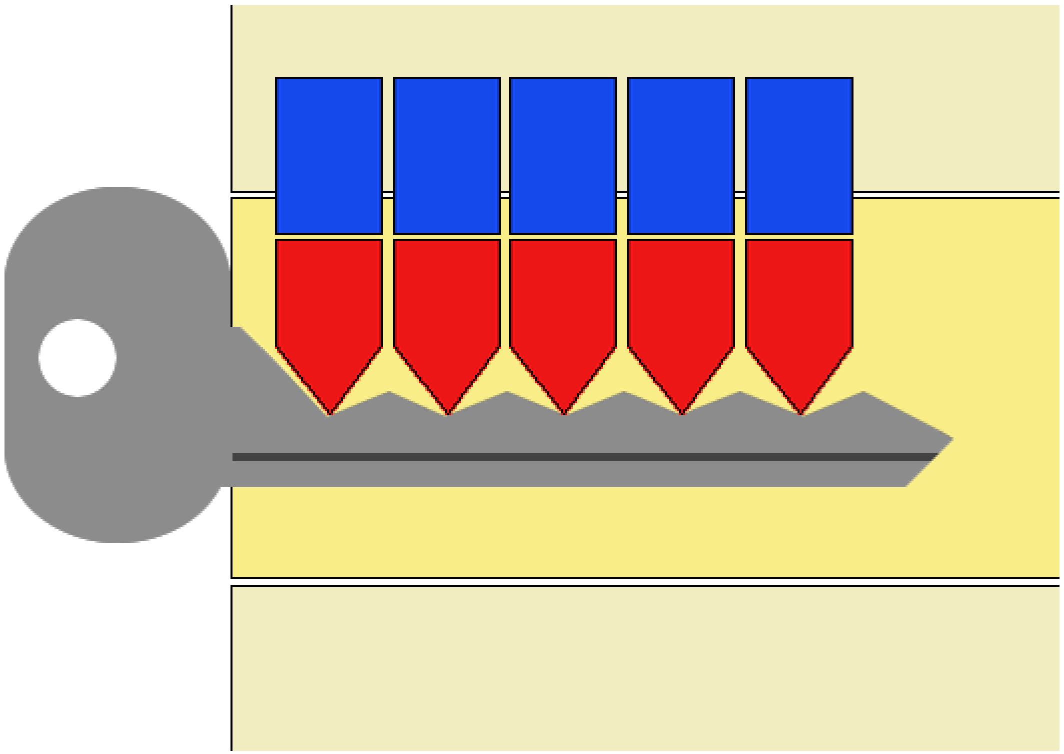


Minimal Movement Bumping



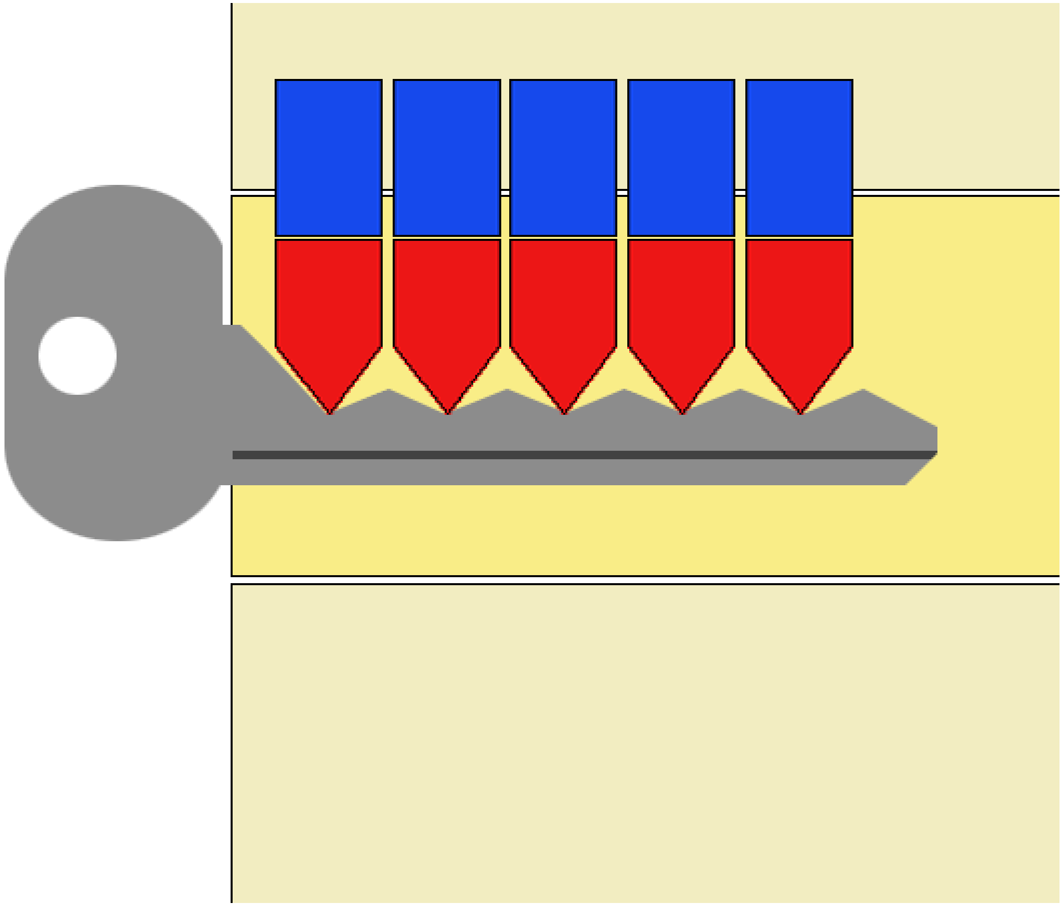


Minimal Movement Bumping



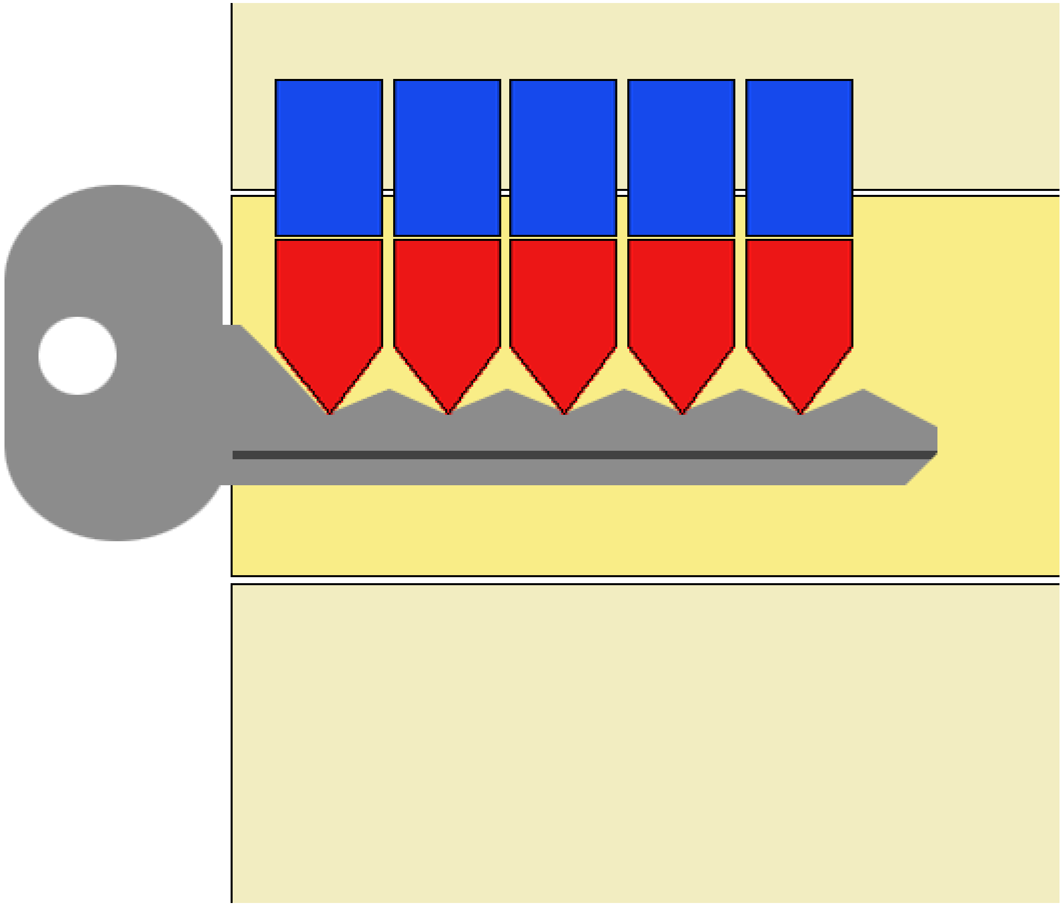


Minimal Movement Bumping





Minimal Movement Bumping





Should bumping scare you?

- Quite frankly, yes.
- Inexpensive
- Inconspicuous
- EASY
- Few locks offer protection
  - Especially in the USA
- Insurance problems

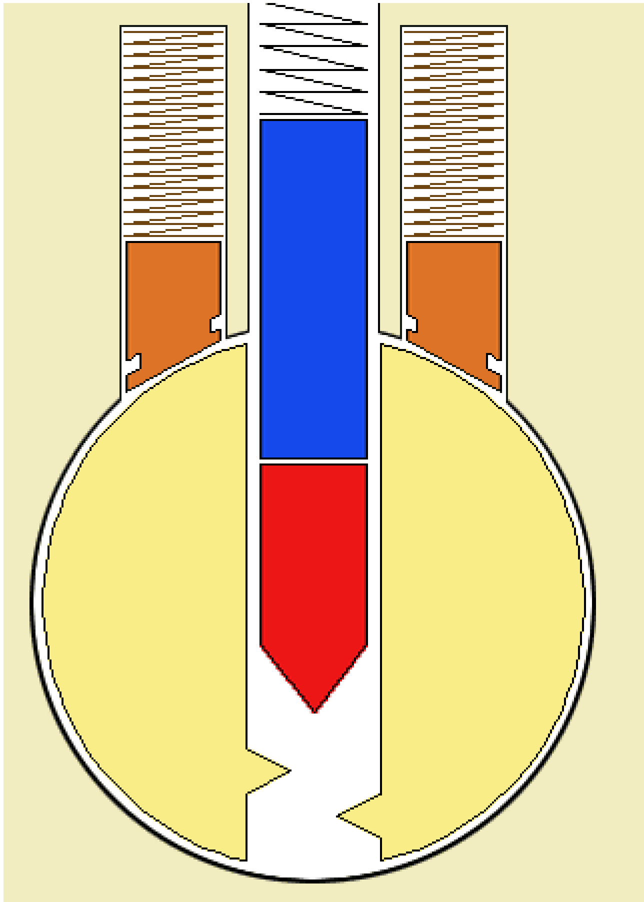


Defending against Bumping

- Sidebars
- Trap pins
- Shadow drilling

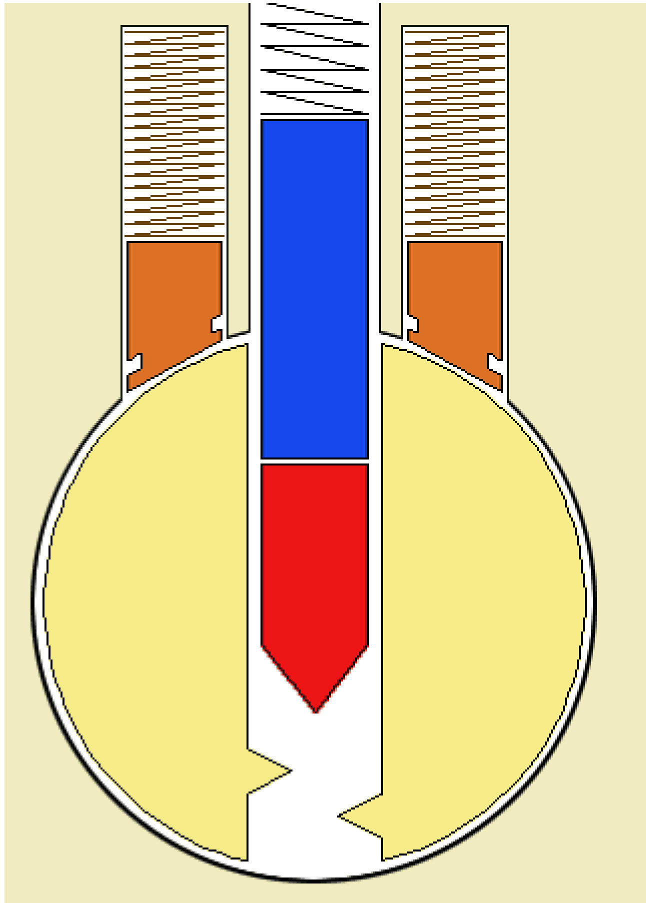


Trap Pins



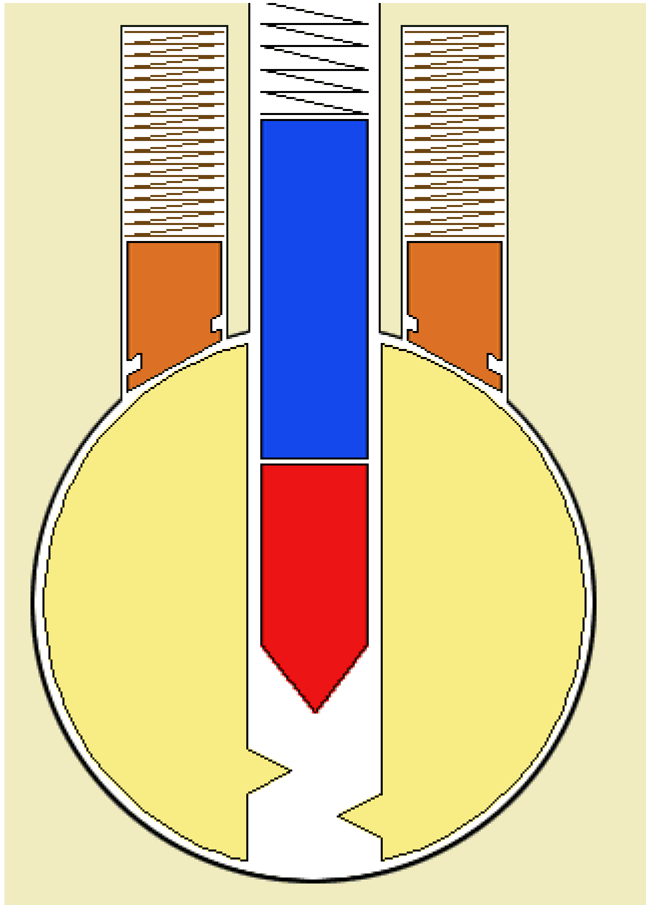


Trap Pins (With Key)





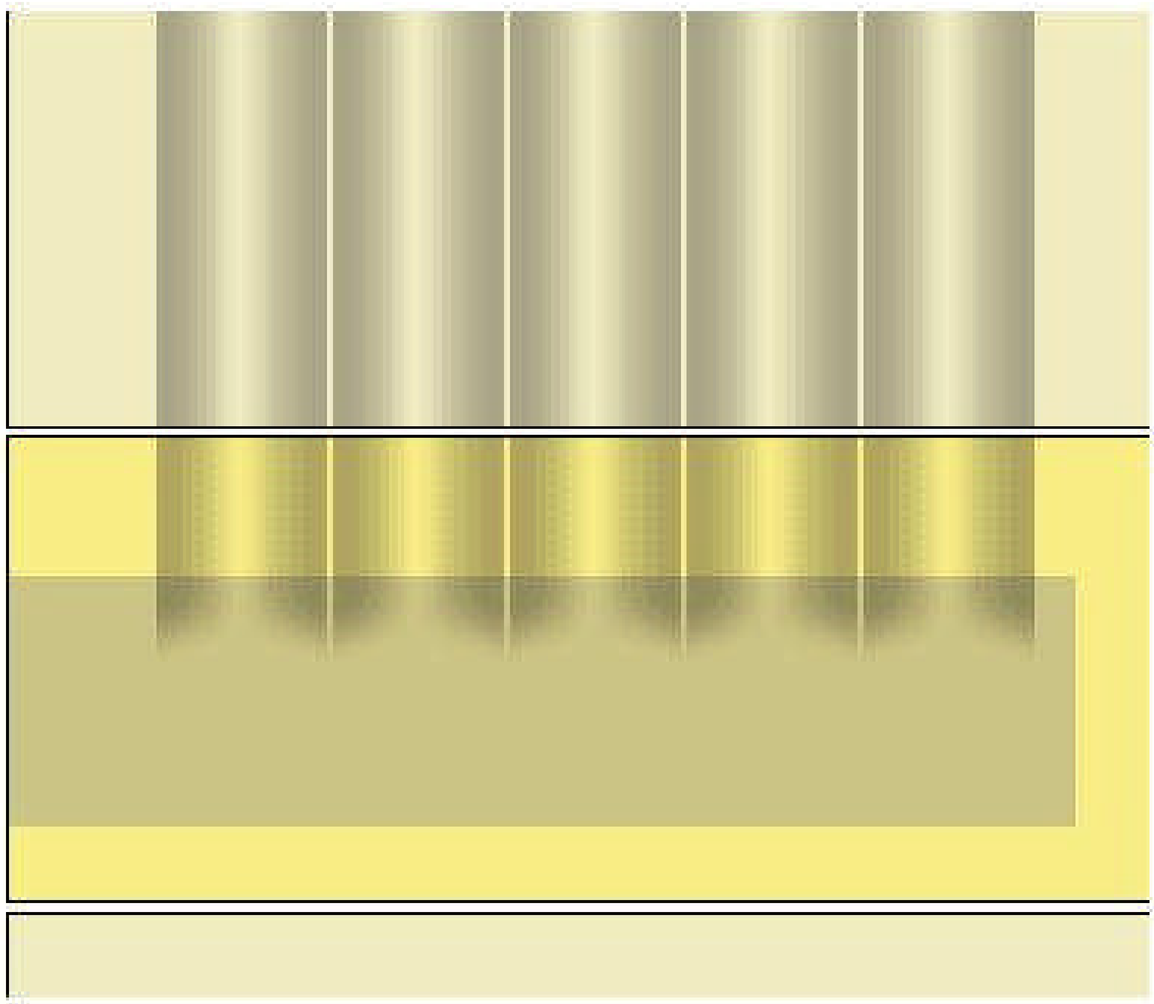
Trap Pins (Bumped)



- What problem exists?

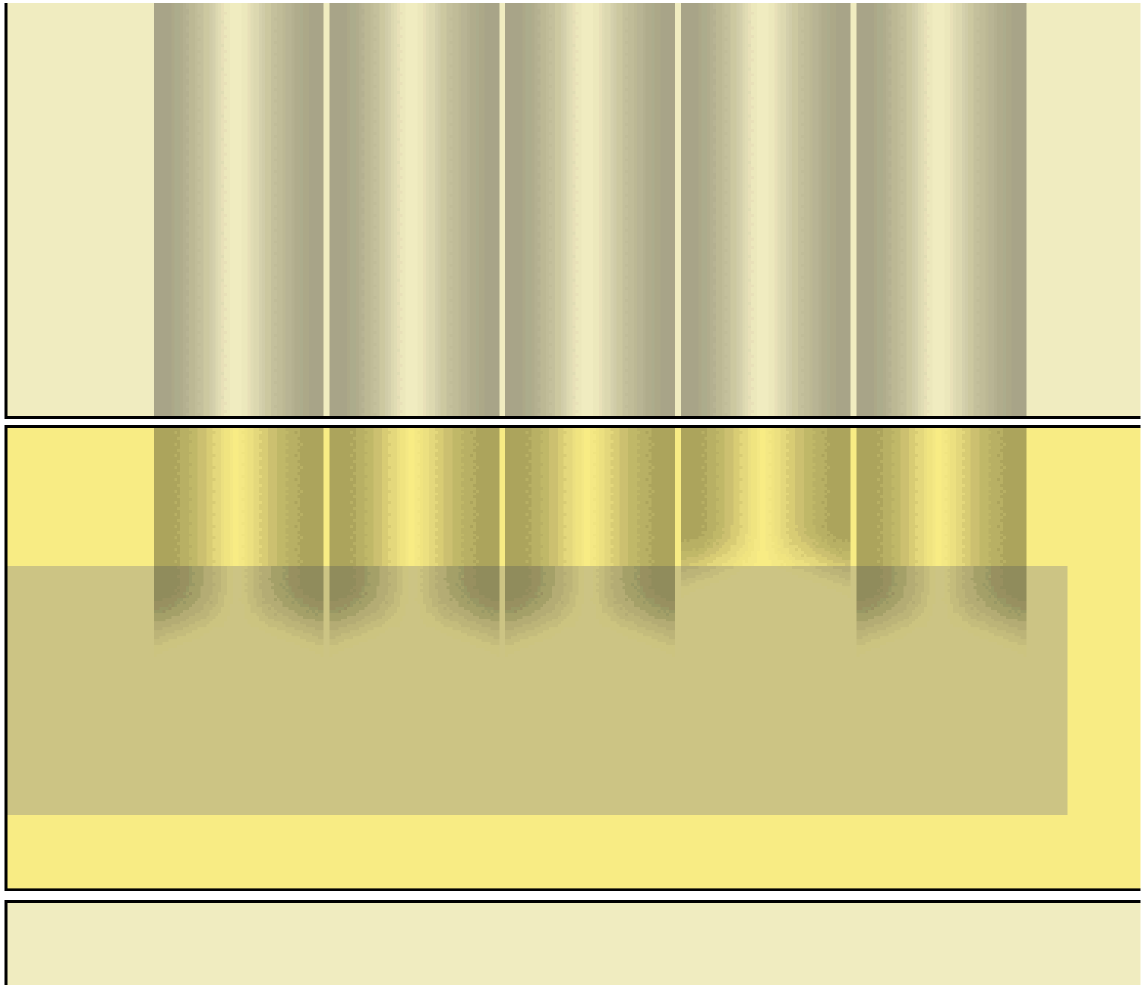


Shadow Drilling



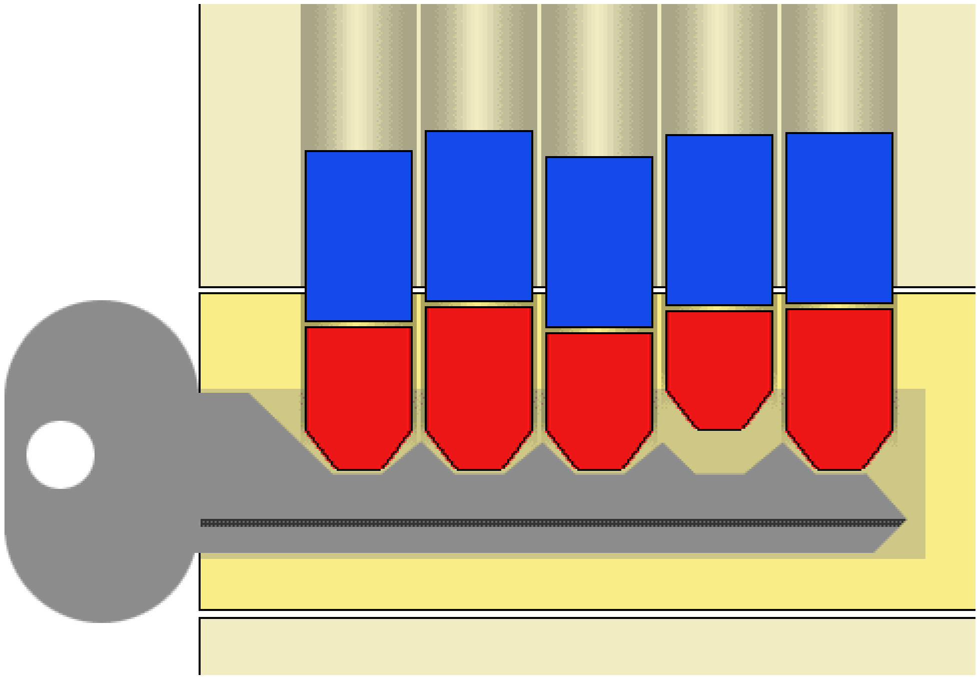


Shadow Drilling





Shadow Drilling





Legal Issues

- Don't be a criminal
- Purchasing
  - Variable…
  - General eligibility:
    1. Lock manufacturer/distributor
    2. Law enforcement / MP
    3. Automobile dealer
    4. Repossession
    5. Certified Locksmith
- Possession
  - "Prima facie"
  - Intent





Affordable Security

- Good Locks:
  - medeco (biaxial chisel pins)
  - BEST (SFICs)
  - ASSA (V-10)
  - ABUS (Granit & Diskus)
  - AMERICAN (700x, 2000 series)
  - SARGENT AND GREENLEAF (833 series)
  - Schlage (Primus)
  - Abloy (wafer/disk locks)
- BAD Locks:
  - Master
  - Kwikset





Buying Picks and Tools

- LayerOne sponsored by:
  - http://lockpickshop.com
    - Great for picks, pick sets, misc. tools (gauges, spinners, etc), and practice cylinders.

- Also check out http://lockpicks.com
    - They offer some items that LPS does not, such as key blanks, key cutters, and other such tools.



Links

- TOOOL
  - http://toool.nl

  Bumping PDF:
  - http://toool.nl/bumping.pdf

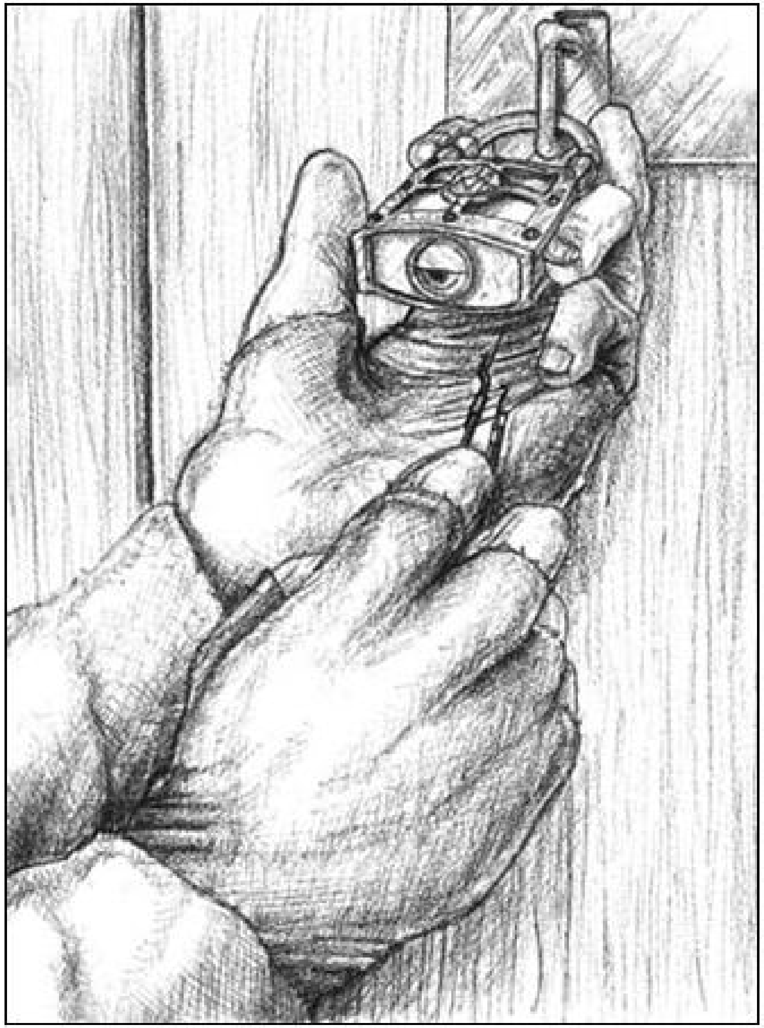
  MIT Guide to Lockpicking:
  - http://toool.nl/pdf/mit.pdf
- Marc Tobias
  - http://security.org
- Barry Wels
  - http://connect.waag.org/toool
- Lockpicking Forums
  - http://lockpicking101.com
- Lockpick Vendors
  - **http://lockpickshop.com**
  - http://lockpicks.com
  - http://southord.com
  - http://peterson-international.com
- KEBump
  - http://kebump.com



Thanks and Credits

- Deviant Ollam (images!)
- Magnus Björkbom (picking illustration)
- SteveW (dimple pick image)

- Lockpickshop.com (sponsors! Woot!)
- KEBump (sponsors! Woot!)



Questions ?

